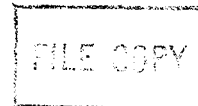


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Report No. 3871-KO

STAFF APPRAISAL REPORT

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

November 16, 1982

Projects Department
East Asia and Pacific Regional Office

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CURRENCY EQUIVALENTS

Currency Unit - Korea Won

US\$1	=	Won 740
W1	=	US\$0.00135
W1 million	=	US\$1,351
W1 billion	=	US\$1.35 million

FISCAL YEAR

Government of Korea	January 1 - December 31
Small and Medium Industry Promotion Corporation	January 1 - December 31
Small and Medium Industry Bank	January 1 - December 31
Korea Long-Term Credit Bank	January 1 - December 31
Citizens National Bank	January 1 - December 31

PRINCIPAL ABBREVIATIONS AND ACRONYMS USED

BOK	-	Bank of Korea
CCCN	-	Customs Cooperation Council Nomenclature
CNB	-	Citizens National Bank
DFC	-	Development Finance Company
EPB	-	Economic Planning Board
HCI	-	Heavy and Chemical Industries
KAIST	-	Korea Advanced Institute of Science and Technology
KCGF	-	Korea Credit Guarantee Fund
KDB	-	Korea Development Bank
KDI	-	Korea Development Institute
KFSB	-	Korea Federation of Small Business
KHIC	-	Korea Heavy Industries Corporation
KLB	-	Korea Long-Term Credit Bank
KOPTEC	-	Korea Production Technology Corporation
KOSAMI	-	Korea Society for the Advancement of Machinery Industries
KTAC	-	Korea Technology Advancement Corporation
KTDC	-	Korea Technology Development Corporation
MAS	-	Manufacturing Advisory Service
MCI	-	Ministry of Commerce and Industry
MIPF	-	Machinery Industry Promotion Fund
MOF	-	Ministry of Finance
MOST	-	Ministry of Science and Technology
NIF	-	National Investment Fund
PROTIP	-	Production Technology Improvement Program
R&D	-	Research and Development
SAL	-	Structural Adjustment Loan
SMI	-	Small and Medium Industries
SMIB	-	Small and Medium Industry Bank
SMIPC	-	Small and Medium Industry Promotion Corporation
SMIPF	-	Small and Medium Industry Promotion Fund
TA	-	Technical Assistance
TOR	-	Terms of Reference

KOREA - THE SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

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KOREA - THE SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT
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I. SECTORAL BACKGROUND

A. The Manufacturing Sector

1.01 Contribution to Economic Growth. In the space of only two decades, Korea has transformed itself from an impoverished, largely agricultural-based country into a middle-income industrializing nation. Per capita GNP (at 1980 prices) increased from US\$477 in 1962 to US\$1,627 in 1981. The manufacturing sector has been the engine of Korea's economic growth with an annual growth rate of 15.5% (in constant prices) between 1960 and 1981. The share of manufacturing value added in GNP increased from 14% to 30% over this period and created approximately 2.5 million new jobs, representing about 37% of total additional employment absorbed by the economy. This growth in manufacturing was led by very rapid export expansion; the share of manufactured exports in total exports increased from 20% in 1961 to over 90% in 1981.

1.02 Structural Change in Manufacturing. During the early phase of industrialization, spanning the 1960s and early 1970s, manufactured exports were concentrated largely on light industrial goods (e.g. textiles, apparel, and wood products) in which Korea demonstrated a comparative advantage based on low cost and efficient labor. Government policies emphasized the promotion of exports through tariff exemptions on materials and equipment to be used directly or indirectly for export production and through financial incentives which provided exporters with automatic access to short-term export credits at subsidized interest rates. These subsidies approximately compensated exporters for the (albeit relatively low average levels of) protection afforded to production for the domestic market./1

1.03 From the early 1970s, however, increased importance was attached to industrial deepening and diversification with emphasis on the development of heavy and chemical industries (HCI), including the machinery industries. This shift in priorities reflected recognition that Korea was gradually losing its comparative advantage in export industries based on low cost labor and that it should begin to develop more sophisticated products relying on a more skilled labor force with higher technical capabilities. Numerous special laws were implemented for the promotion of priority industries. Preferential, low-cost financing was made available, through the National Investment Fund (NIF) and other special funds, and selected industries received generous tax exemptions and concessions.

/1 See for example, Industrial Policy and Development in Korea, IBRD Staff Working Paper No. 263, August 1977.

1.04 Recent Problems and Policy Responses. In retrospect, the resulting growth of manufacturing investment in these priority areas was too rapid and focussed somewhat excessively on large, capital-intensive industries (such as heavy machinery and petrochemicals), resulting in a sharp rise in capital intensity of output and overcapacity. At the same time, industries not eligible for these special promotion measures (e.g., traditional export industries such as textiles and clothing as well as small and medium machinery industries) faced greater difficulty than they would have without these special promotion schemes in gaining access to resources necessary to upgrade quality and move into more technologically sophisticated areas of production. The onset of international economic recession in 1979 exacerbated the problems of excess capacity and misallocation of investment resources by triggering a substantial reduction of industrial output, with machinery industries among the most seriously affected activities.

1.05 The Government has recognized these problems and has instituted a number of policy adjustments. In the area of industrial and trade policies the Government recently outlined a number of important measures and a medium-term structural adjustment program in a Letter of Development Policy for 1982-86. The letter provided the basis for the Bank's first Structural Adjustment Loan (SAL) of US\$250 million which was approved in December 1981./1 The main features of the structural adjustment program relating to the manufacturing sector include: a comprehensive review of industrial incentives and protection policies with the aim of developing policies for promoting more competitive conditions and reducing the role of Government in directing resource allocation; development of programs for restructuring and consolidation of large industries currently suffering from substantial excess capacity; and the strengthening of project appraisal capacity in Government agencies and key financial institutions for the better evaluation of major projects. Government measures in support of technological development have also been strengthened substantially (see para. 1.22).

1.06 A comprehensive program of reform for the financial sector, with emphasis on liberalizing the operations of financial intermediaries, was launched in 1980. This program included interest rate policy, rationalization of the NIF, and denationalization of commercial banks. In line with the increasing focus of the Bank's lending on sectoral policy this reform program was reviewed in the context of two recent lending operations to the Korea Long-Term Credit Bank (KLB) (Loan No. 1932-KO) and the Korea Development Bank (KDB) (Loan No. 1933-KO). A package of specific policy measures agreed upon during negotiations of these two projects is expected to improve the efficiency with which resources are allocated by the financial system. At the end of June 1982, the Government implemented a package of wide-ranging economic reforms including a reduction in interest rates by four percentage points and regulatory steps to discourage future transactions in the curb money market.

/1 See IBRD President's Report No. P-3156-KO, November 17, 1981.

The main rationale of these measures was to stimulate the Korean economy and to provide a degree of relief for highly leveraged domestic corporations. The Bank is currently conducting discussions with the Government on these reforms and assessing their long run implications. The issues will be treated more specifically in the context of a proposed financial sector loan (para. 1.31).

B. The Machinery Industries

1.07 Organization and Performance. The machinery industries/¹ subsector is broadly defined to include certain metal products (e.g., handtools, nuts and bolts); general machinery (e.g. engines and turbines, agricultural machinery and equipment, textile, metal and woodworking machinery); electrical machinery (e.g., transformers, switchgear, radios and TVs); transport equipment (e.g., ships, railway equipment and motor vehicles) and precision machinery (e.g., measuring equipment and photographic apparatus). In terms of size distribution, small and medium /² machinery producers accounted for 94% of enterprises, 38% of employment, 24% of gross output and 28% of value added of the machinery subsector in 1980. In 1972, the machinery industries accounted for only 13% of manufacturing value added and 11% of manufactured exports. During the period 1972-80 their volume of output grew at an annual rate of 37% compared with 19% for the manufacturing sector as a whole and by 1980, they accounted for 22% of manufacturing value added and 21% of manufacturing exports (and 20% of total exports).

1.08 Small and medium producers in 1980 comprised 98% of number of enterprises, 63% of employment, 50% of gross output, and 50% of value added of the general machinery subsector, which is expected to account for the major part of the technical assistance and credit under this project. The general machinery subsector accounted for some 2.5% of gross output, 3% of value added, and 2.5% of exports of the manufacturing sector as a whole and about 15% of gross output, 19% of value added, and 10% of exports of machinery industries. During 1972-80, the general machinery industries' volume of output grew at an average annual rate of 34% and exports at an average annual rate of 37%. Details regarding the structure and growth performance of the subsector are shown in Annex 1, Tables 1 and 2.

¹ Machinery industries are those manufacturing activities which fall under the International Standard Industrial Classifications (ISIC) Category 38, i.e., the "manufacture of fabricated metal products, machinery and equipment." See New York: United Nations, Indexes to the International Standard Industrial Classifications of All Economic Activities, (ST/STAT/M.4/Rev. 2/Add.1, 1971).

² Small and medium machinery producers are generally defined (in various laws and decrees) as enterprises with either less than W 500 million in assets or less than 300 employees.

1.09 The Role of Machinery Industries in Korea's Economic Development. There are a number of major reasons for the growing importance of the machinery industries in Korea's industrial growth. Firstly, Korea's comparative advantage has begun to shift away from the relatively unskilled, labor-intensive industries due to rising wages relative to other developing countries, the rising competitiveness of these other developing countries in Korea's traditional exports, and the rising protectionism in countries which have traditionally been Korea's markets for its light industrial exports. Secondly, Korea has, over the last fifteen years, developed its technical manpower and a highly educated labor force and has begun to demonstrate its capacity to produce selected machinery products, especially parts, components and subassemblies which form the core of the machinery industries. Korea's future areas of comparative advantage are expected increasingly to be in higher technology industries due to continued development of its skilled labor force which, nevertheless, will still command lower wages than in most developed countries which have much higher per capita income levels. Thirdly, machinery industries have close linkages with other machinery industries and with other sectors of the economy as suppliers of essential parts, components and finished capital equipment. These linkages provide potential for rapid expansion of domestic demand for those locally-produced machinery products which can be produced at cost and quality levels competitive with imported supplies. Conversely, the competitiveness of machinery-using industries can be considerably enhanced by ready access to high quality, low cost local sources of supply.

1.10 Future Prospects. Projections embodied in the Fifth-Five Year Economic and Social Development Plan (the Fifth Plan), indicate that the manufacturing sector is expected to continue as the main engine of growth over the period 1982-86 with an average annual growth rate of 11% (in real terms), increasing its share of GNP from about 29% in 1980 to 34% in 1986. Within the manufacturing sector, the machinery industries are projected to grow at about 18% p.a., almost double the rate of growth of the next fastest growing manufacturing subsector (light industries, with a growth rate of 9.5%). On the basis of these projections, machinery's share of manufacturing value added would increase from 17% in 1980 to 23% in 1986. By 1986, exports of machinery are expected to account for more than 32% of total exports, compared with less than 20% in 1980 (Annex 1, Table 7). To achieve this projected growth in machinery output, the Fifth Plan projects that investments in these industries amounting to W 6 trillion (about US\$9 billion) would be needed between 1982 and 1986, lifting the share of total investment in the manufacturing sector contributed by these industries from 24% during 1972-79 to 37% during 1982-86./1 The projected increases for machinery

/1 The respective shares of total national investment are 5.6% during 1972-79 and 8.3% during 1982-86.

exports are massive, from US\$3.5 billion in 1980 to US\$17.3 billion in 1986, or an average annual rate (in real terms) of about 22%. They imply a more than three-fold increase for general machinery and more than two-fold increase for transport equipment.

1.11 These are very ambitious targets and will be difficult to achieve because of the slow economic recovery expected in Korea's anticipated export markets, the severity of competition in machinery industry exports, and the length of time needed to improve quality and productivity and export marketing of machinery products. While the projections for the machinery industries appear to be optimistic, it is clear nevertheless that the Government intends that the machinery industries should play the key role in Korea's manufacturing growth during the Fifth Plan period. Without rapid growth of these industries, the momentum of Korea's economic development could be severely impeded since no other sector or subsector appears capable of generating the necessary economic expansion. Further, although the domestic market for machinery has grown rapidly (see Annex 1, Table 9), its absolute size will remain a limiting factor and therefore development of the machinery industries must be essentially export-oriented to achieve the targeted growth rates. The success of this development will depend on favorable conditions both in terms of market (demand) conditions and the ability of the industry to compete in securing a share of the market (supply conditions), including possibly the provision for financing for machinery exports (para. 1.21).

1.12 An analysis of trade and markets in machinery products indicates that the trade in these products has risen rapidly throughout the world. The volume of machinery imports by Korea's three major markets (US, Japan and Germany - which collectively absorbed more than 50% of Korea's machinery exports in 1979) has been rising and diversifying in the range of products. Also, in contrast to the spectre of protectionism in developed country markets against imports of Korea's traditional export products, machinery products have not, in general, been subject to substantial protection. Imports of machinery by these three countries over the period 1970 to 1979 are shown in Annex 1, Table 8. Less developed country (LDC) markets for machinery products grew more rapidly than those of developed countries during the 1970s; they appear also to offer good potential for future expansion of Korean exports. Overall, export markets, while difficult to tap, offer feasible growth opportunities over the longer term, and demand conditions pose a difficult though not insurmountable obstacle to development. Korea's problems are primarily on the supply side, as discussed below.

C. Constraints to Development

1.13 The economic recession in Korea, which has continued since 1979, has served to highlight major structural imbalances and inherent weaknesses in the technical and technological capacity of the machinery subsector, particularly in general machinery. For the large heavy machinery producers, the recession closely followed the massive expansion programs which were

fostered by the rapid expansion of Government subsidized credit and the provision of generous tax incentives to heavy industries. Korea's major industrial conglomerates competed with each other to establish a production base in these Government-sponsored industries, thereby contributing to serious duplication of facilities and the creation of capacity considerably in excess of levels consistent with market size or technical and engineering capabilities. At the same time, small and medium producers of parts, components and subassemblies experienced difficulty in obtaining term-financing to expand or upgrade their facilities as a consequence of the emphasis given to large heavy machinery producers in the credit allocation process. Imbalances appeared, therefore, within the machinery subsector with excessive capacity for assembly of large end-products and inadequate and outdated capacity for the production of parts, components and subassemblies.

1.14 The difficulties faced by these large producers in making efficient use of their new facilities were severely exacerbated by the onset of economic recession (in Korea and in world markets) and many have been operating at substantially below 50% of capacity. On the other hand, small and medium machinery producers do not appear to have faced major problems of under-utilized capacity.^{/1} Nevertheless, they face serious technical and managerial difficulties which must be overcome if they are to play the key role envisaged for them in Korea's industrial development strategy.

1.15 The Government has already initiated a number of actions to address the problems faced by the heavy machinery industries. As previously noted, the Government is committed to reducing the subsidy element of NIF lending so that it no longer is a major distorting influence and reviewing industrial incentives in the context of the SAL agreements, with the objective of increasing the role of the market in resource allocation. Also, some restructuring of the segments of the heavy machinery industries most affected by the excessive expansion programs has already taken place. Beginning in August 1980, the Government took a series of actions to rationalize investment in the heavy machinery sector. The number of enterprises permitted to engage in particular areas of production was reduced, planned investment in potentially duplicative facilities was postponed indefinitely and additional long-term capital was provided to major producers to improve their financial strength and permit balancing and rationalizing of their capital structure.

^{/1} This conclusion is supported by the results of a recent survey of 15,000 firms in the Korean Federation of Small Business (KFSB), of which 3,400 firms were in the category of "metal products, machinery and equipment." The survey showed that over 90% of the sampled firms in the latter category reported having capacity utilization ratios of 80% or above during October 1981, compared with a corresponding figure of 75% for all small and medium manufacturing enterprises in the survey. Even during 1980, when overall operating ratios were at their lowest levels, more than 70% of these small and medium metal and machinery producers reported operating ratios of 80% or above.

Further, in the context of the SAL, a Task Force was formed to review the problems of the heavy and chemical sector and make recommendations regarding possible measures for the promotion of exports and strengthening engineering capacity in the sector.

1.16 The Bank's Sector Report on the Korean machinery industries /1 found that machinery producers, particularly small and medium general machinery producers, in most cases, are not able to effectively use their existing equipment to obtain maximum output at acceptable quality standards. By international standards, their scale of output is low, costs are high and quality is low. Producers face serious problems in areas such as choice of equipment, operating practices, labor training, product quality and level and absorption of technical know-how. These problems must be addressed and resolved if Korean machinery industries are to progress beyond exporting relatively simple, standardized products which have constituted the bulk of Korea's rapidly growing machinery exports to date but for which the prospects for continued rapid export expansion appear limited, /2 and domestic industry will have to continue to rely heavily on imported machinery and equipment. Resolution of these problems is also essential if Korea is to be competitive with developing country machinery exporters, which supply the lower end of the market, and even more so if Korea is to compete with developed country machinery exporters, which supply the more sophisticated segments of the market.

1.17 Resolution of these managerial and technological problems is likely to be achieved more quickly and efficiently in an environment in which Government policies, including financial, trade and investment policies, are consistent with and supportive of efficient working of the market mechanism. Nevertheless, although competitive pressure can provide a more receptive atmosphere for the diffusion of improved operating efficiency, explicit attention to improving institutional mechanisms in areas such as dissemination of information and training is needed to encourage the introduction of improved technology and efficiency. Although machinery industries in general need technical assistance and training, small and medium enterprises are felt to need special attention since they have less capacity than larger enterprises to obtain assistance on their own. Also, small and medium producers constitute the core of the general machinery industries; and this is expected to be an area where investments in technical assistance and training are likely to have the highest pay-offs (paras. 3.23, 3.26 and 3.29).

/1 Korea: Development of the Machinery Industries (A Case Study in Strategy and Tactics), IBRD Report No. 2130-KO, March 19, 1979.

/2 For example, Korean lathes exported to the US are used mainly by training institutions where tolerances and load factors are not prime concerns. This market is relatively limited, however, and, in order to break into the much larger market for the more sophisticated production lathes, substantial improvements in design and quality aspects will be required.

1.18 In recognition of the need for institutional support for the upgrading of technical and technological capacities of Korea's industries, the Government has created a number of institutions to upgrade Korean industrial technology along various stages of the product cycle. The Korea Technology Development Corporation (KTDC) was established in 1981, as a private sector entity with strong public sector support,^{/1} to fill the institutional gap in the Korean capital market to provide venture capital funds. The Bank has recently approved a loan to KTDC ^{/2} which has as its main objective the acceleration of advanced foreign technology imports and in-house research and development (R&D) work through the provision of funds that are not available from other financial institutions in Korea, due to the software-intensive and/or risky nature of such projects. Further, KTDC will also help strengthen the link between public research institutes and industry through its financing of R&D projects sponsored by industry but carried out by the institutes. KTDC will complement the activities of existing financial institutions, as well as those of other industry support organizations. Korea Technology Advancement Corporation (KTAC) was established as a wholly-owned subsidiary of the Korea Advanced Institute of Science and Technology (KAIST), with the primary objective of commercializing production technologies (products and processes) developed by KAIST. To this end, it was set up to prepare detailed feasibility studies for selected projects with strong commercial potential based on the results of KAIST's R&D efforts; it will also make equity investments in such projects. IFC has recently approved an equity investment of W 500 million (US\$0.7 million equivalent) in KTAC ^{/3}. The Small and Medium Industry Promotion Corporation (SMIPC) was established in 1979 as the primary public sector agency in Korea to provide extension services to small and medium enterprises (SME) and to provide training of target groups of SME management and labor in both on-the-job and off-the-job skills. In early 1981, the Korea Production Technology Corporation (KOPTEC) was established, and it was entrusted with the responsibility of administering a program of providing in-plant guidance to upgrade technological capabilities of principally small and medium machinery enterprises. At the time of KOPTEC's establishment, it was felt that none of the institutions then existing in Korea had the capability of administering such a program. However, as a result of the Government's efforts to rationalize the provision of extension services to SMEs (para. 1.23), in May 1982, the Government took steps to merge KOPTEC into SMIPC. Under such a merger, SMIPC has taken over the functions and staff of KOPTEC.

^{/1} Over 1981-84, Government equity contributions would amount to 40% of KTDC's equity and 30% of its debt.

^{/2} Loan No. 2112-KO, approved March 25, 1982. IBRD Report No. 3707-KO, Korea: Technology Development Project, dated February 25, 1982.

^{/3} Investment No. 628-KO, approved March 16, 1982. IFC Staff Appraisal Report No. IFC/T-394, and President's Report No. IFC/P-473, both dated February 26, 1982.

D. Policies Affecting the Machinery Industries

1.19 The Government has already implemented or has planned a number of initiatives in policy areas of direct relevance to the machinery industries. As indicated below, these initiatives, in the form of new or revised policies or review of existing policies, constitute a sound basis for tackling the major existing policy-related impediments to efficient development of these industries.

(a) Financial Sector Policies

1.20 The broad policy initiatives already taken or planned in the financial sector were discussed in para. 1.06. The Government has initiated broad measures aimed at reducing the magnitude and scope of NIF and other subsidized lending programs. These measures should, over time, help to ensure that small and medium enterprises (including those in the machinery industries) receive better access to financial resources. As previously noted, the Bank is currently discussing with the Government its recent policy initiatives and assessing their long-run implications. The issues will be treated more specifically in the context of a proposed financial sector loan (para. 1.31).

1.21 In the area of export finance (i.e. finance for the marketing rather than production of machinery), the demand for medium- and long-term suppliers' credit ^{/1} is expected to increase rapidly with the growth of machinery exports. The operations of the Korea Export Import Bank (Exim Bank), which provides suppliers' credit for machinery exports at interest rates comparable to those available to overseas machinery exporters, will be expanded considerably with disbursements planned to increase from W 505 billion in 1981 to W 1,470 billion in 1986. While most of Exim Bank's funds have been, and will continue to be, made available for exporters of ships and industrial plant, small and medium machinery producers will also have access to a growing volume of these funds. Also, increased efforts will be made to attract cofinancing from commercial banks to meet the gap between demand for these funds and Exim Bank's resources.

^{/1} Importers of machinery (e.g. textile or agricultural machinery) generally seek extended payment terms from the exporter. It is usual practice for the exporter to seek covering finance from a domestic bank (suppliers' credit). The Korea Export-Import Bank (Exim Bank) provides this facility. In some situations Exim Bank lends directly to the overseas buyer (buyer's credit), or extends a line of credit to a foreign bank for relending to importers of Korean machinery (relending facility). However, suppliers' credit constitutes the major source of lending for machinery exports by Exim Bank at this time (more than 95%).

(b) Technology Development Policies

1.22 Substantially increased emphasis has been placed on technology development during the last few years, and the Government has established a number of new institutions in the field (para. 1.18). In order to promote accelerated technological development, foreign direct investment has been opened up across a much expanded range of industries and minimum investment and local equity participation conditions have been relaxed. Further liberalization is planned for the future. The import of foreign technology under licence also has been substantially liberalized. In addition, tax and financial incentives for research and development (R&D) and technology upgrading have been increased and the provision of financial resources for local R&D and its commercialization has been expanded through institutions such as KTDC and KTAC. These recent efforts to promote foreign direct investment and technology development, which are consistent with Korea's changing comparative advantage, will take time to have a demonstrable impact, especially in the current recessionary economic environment in Korea. Nevertheless, they are expected to have a major positive effect on the development of the machinery industries.

(c) Extension Services and Technical Assistance

1.23 The Government has taken significant steps to strengthen the overall institutional framework for the provision of extension services, technical assistance and training. The operations of the Small and Medium Industries Promotion Corporation (SMIPC), the principal Government agency responsible for extension services and training for SMIs, have expanded very rapidly and will continue to do so. Also, in the context of a recent Bank loan to Small and Medium Industry Bank (SMIB),^{/1} the Government agreed to undertake a review of extension services in Korea with primary emphasis on the need and scope for rationalization of the delivery system for these services and the means for improving coordination among the many different agencies providing such services. The review was carried out during November/December 1981 and, in January 1982, the Government took actions to rationalize the provision of extension services by reducing the number of extension service agencies dealing with SMI from 19 to 5. In May 1982, the Government took further action to merge the Korean Production Technology Corporation (KOPTEC) into SMIPC. The remaining three extension service agencies comprise the three financial institutions, SMIB, Citizens National Bank (CNB), and Korea Credit Guarantee Fund (KCGF), which provide limited technical assistance to their clients in the course of project appraisal and supervision. Overall responsibility for coordinating the provision of technical assistance now clearly rests with SMIPC, which provides for a much more integrated approach to industrial extension and training. The Government also created a working group comprising responsible managers of these agencies charged with improving

^{/1} Loan No. 2004-KO, signed July 7, 1981. IBRD Report No. 3382-KO, Korea: Small and Medium Industry Loan (SMIB IV), dated April 24, 1981.

coordination. The Government is presently preparing a more detailed action program based on its recent review which will focus on, among other things, establishing and monitoring performance targets for the four extension agencies; and improving the services available from each agency. The contents of the action program were reviewed during negotiations.

(d) Protection Policies

1.24 Machinery industries appear to have been given significant protection against imports. Although average tariff protection (net of tariff exemptions) for these industries is only about 10%, the proportion of machinery items on the restricted list (i.e., which can be imported only if no similar locally-produced item is available) is the highest among manufacturing industries (almost 50%, in 1981/82). There has been some liberalization of restrictions on these items over the last three years in conjunction with overall import liberalization and there is broad Government commitment to continued liberalization over the Fifth Plan period. However, the recent liberalization of machinery items has not been sufficient to reverse the expansion of restrictions on imported machinery between 1971 and 1977. While some degree of protection on infant industry grounds appears to be justified, the potential available protection for these items can be very high and, depending on the degree to which this protection is used, may contribute to serious inefficiency of resource use.

1.25 As noted in para. 1.05, the Government is undertaking a detailed review of overall industrial incentives and protection policies, which will give priority to a review of the machinery industries, as part of the agreements reached under the SAL. The proposed project for the small and medium machinery industries has enabled the Bank to focus attention more sharply on the specific issues relevant to the machinery industries and thereby has provided the opportunity to specify the scope and coverage of the review of protection for these industries in more detail. Specific Terms of Reference (TORs) and staffing requirements for this review of protection for the machinery industries have been agreed with the Government. These TORs complement the broader TORs and staffing requirements previously agreed with the Government under the SAL. Since this review is part of the SAL-related studies it would be subject to the same timetable as the overall SAL studies and would be financed by the Government. The final report is to be completed by June 1983. Detailed action programs for further import liberalization and tariff reform for the machinery industries would be formulated and discussed with the Bank in the context of its ongoing program of structural adjustment lending to Korea.

(e) Subcontracting Policies

1.26 Subcontracting is critical for efficient development of the machinery industries since competitiveness of large end-product producers, and the subsector as a whole, depend heavily on the development of close working relationships with suppliers of parts and components. Present Government

policies promote these relationships through the provision of financial and technical assistance to subcontractors. Also, the tax system is based on value added of various stages of production and thus is properly neutral between large, vertically-integrated production versus subcontracting. However, the Government has gone further through an interventionist approach of selecting subcontractors eligible for assistance and applying pressure to large assemblers to subcontract to them. This approach, which provides scope for considerable administrative discretion in the selection process, is contrary to the overall policy thrust of the Fifth Plan which calls for reduced Government intervention and greater reliance on the market in determining how resource will be allocated. In conjunction with protection policies, discussed in paras. 1.24 and 1.25, the process of selecting eligible subcontractors provides a potentially high level of protection for these subcontractors against all sources of competition, including other small and medium producers not selected, large producers currently producing parts in-house and importers. If subcontractors are shielded too effectively and/or for too long against this competition, they may not mature into efficient, internationally-competitive producers and will need continuing high, and perhaps growing, levels of protection.

1.27 The Government has agreed to initiate a critical evaluation of the impact of its subcontracting policies and procedures as well as a review of alternative policies designed to assist in the development of efficient subcontracting arrangements. This would be undertaken as a specific component of the SAL-related studies of industrial incentives and protection to be funded by the Government. As with the study of protection for the machinery industries, detailed TORs and staffing requirements of the subcontracting review have been agreed with the Government. The final report is to be completed by June 1983. On the basis of the review a detailed action program for restructuring of subcontracting policies and procedures would be developed and discussed with the Bank in the context of its ongoing program of structural adjustment lending to Korea.

(f) Letter of Implementation of Selected Policies Pertaining to the Machinery Industries

1.28 The Government has provided the Bank with a Letter of Development Policy for the Machinery Industries, (Annex 2) which summarizes the various policies and proposed courses of action in the areas discussed above (Annex 2) to the extent they apply specifically to the machinery subsector. While the reforms in the financial, trade, and investment policies are essential to maintaining a competitive environment and the long-run efficient development in the machinery sector; the explicit attention to improving operating efficiency and the resolution of managerial and technological problems to be provided by this project would demonstrate immediate positive results.

E. The Bank's Industrial Lending Strategy for Korea

1.29 In the past, the bank's industrial lending strategy has been aimed mainly at the institutional strengthening of development finance companies (DFCs) acting as intermediaries for channeling resources, including those of the Bank, to industry.^{/1} To date, the Bank has provided US\$1,027.5 million to the Korean industrial sector through direct relationships with four DFCs in Korea, namely KLB, KDB, SMIB, and CNB. Eight Bank loans, aggregating US\$410 million have been made to KLB since 1968, and four Bank loans, totalling US\$352.5 million, have been made to KDB since 1975 for onlending mostly to large-scale industries. Four Bank loans, totalling US\$205 million, have been made to SMIB since 1975 for onlending to small and medium industries (SMI). Coverage of the very small end of the SMI sector has been improved with a Bank loan of US\$30 million to CNB in 1980, and a second loan of US\$30 million to CNB was approved in May 1982. Implementation of these projects has been generally excellent. Project Completion Reports (PCRs) for Loan Nos. 735-KO, 905-KO, and 1145-KO to KLB, for Loan No. 1095-KO to KDB, and for Loan No. 1175-KO to SMIB concluded that in each case, the Bank's twin objectives of transfer of resources and institution-building vis-a-vis these DFCs have been satisfactorily achieved in the context of the respective loans and that the Bank loans have aided in achieving the objectives of the Government's industrial strategy. The Project Performance Audit Reports (PPARs) for Loan Nos. 735-KO, 905-KO, and 1145-KO^{/2} and for Loan No. 1095-KO^{/3} supported the PCRs' conclusions.

1.30 The major objectives of Bank lending through the DFCs in Korea have been: (a) strengthening the institutional base for efficient intermediation; (b) support for Government investment objectives, including promotion of balanced growth through regional development, employment generation, export orientation, technological upgrading, and skill development; and (c) resources transfer to provide the foreign exchange resources needed for industrial development. These three objectives will remain important in the Bank's industrial lending in the 1980s, but the relative emphasis on these objectives will change significantly. The institution-building process will be pursued further, as in the recent loan to CNB,^{/4} although in the case of KDB, KLB, and SMIB, which are mature

^{/1} The two exceptions are the Korea Heavy Machinery Loan (Loan No. 1466 KO) and the Electronics Development Project (Loan No. 1676-KO).

^{/2} Project Performance Audit Report No. 3419, dated April 30, 1981.

^{/3} Project Performance Audit Report No. 3430, dated April 13, 1981.

^{/4} Loan No. 2144-KO, approved May 13, 1982. IBRD Staff Appraisal Report No. 3820a-KO, dated April 19, 1982.

DFCs, the Bank's institution-building role has been largely completed. The significant maturity attained in the Korean financial sector, partly as a result of the Bank's assistance in strengthening institutional capabilities, coupled with the Government's willingness to address directly industrial and financial issues, makes it possible for the Bank to shift its lending objectives from institution-specific issues to broader sectoral issues.

1.31 The most recent Bank loans to KDB and KLB were predicated on a broad-based macroeconomic approach. The two loans provided a vehicle for discussing with the Korean Government the blueprint for the initiation of reform of the financial sector aimed at liberalizing the operations of the financial institutions. It is expected that the agreements will ultimately improve the responsiveness of the financial system to the requirements of Korean industry and will help improve investment efficiency. Together with the impact of the reforms at the end of June 1982 (para. 1.06), these issues will again be addressed in the context of a proposed financial sector loan, currently planned for FY84. The Bank's dialogue with the Government on financial sector issues has been proceeding in parallel with a greater involvement in the formulation of a development strategy for the industrial sector, which aims to bring about the structural adjustments necessitated by the changing environment in which Korean industry operates. The Bank has discussed with the Government the broad questions pertaining to industrial investment strategy and incentives in industry and trade in the context of the recently concluded Structural Adjustment Loan (SAL) (para. 1.05).

1.32 Structural adjustment lending and financial sector loans provide the vehicles for a closer involvement by the Bank in assisting Korea to promote financial and industrial sector development. The strategies and policy measures adopted by the Government in both sectors at the macroeconomic level are expected, over time, to gradually reduce distortions in factor prices and policies at a subsector level. In the meantime, concerted action is required in specific subsectors facing difficulties or in areas where new products and technologies are being developed; in this way, the Bank's macro-based lending strategy will be supplemented by a direct involvement in the restructuring or development of specific subsectors.

1.33 In recent years, the Bank has also been assisting the Government's effort to develop the country's technological capability. The Electronics Technology Project,^{/1} approved in March 1979, provided the Korea Institute of Electronics Technology (KIET) with sophisticated facilities to enable

^{/1} Loan No. 1676-KO, approved March 22, 1979. IBRD Staff Appraisal Report No. 2322-KO, dated February 27, 1979.

it to undertake production-oriented development work, and financed an R&D program that is directly linked to the needs of the electronics industry. The Sector Program on Higher Technical Education,^{/1} approved in February 1980, aimed at improving the quality of higher technical education and increasing the supply of qualified engineers, technicians and managers. Another Education Sector Loan for Science and Technology is currently under preparation. Bank support for the proposed project, together with Bank Group assistance for KTDC and KTAC (see para. 1.18), reflects the priority which the Government and the Bank Group attach to the comprehensive effort to improve the technological level of industry, to enable Korea to be successful in diversifying its exports from traditional light industrial products to more technology-intensive ones. The proposed project provides technical assistance, training, and credit for the small and medium machinery industries to significantly improve their production technology, and hence their output, productivity, and export competitiveness. It is a substantial part of the Bank's strategy for industrial financing in Korea.

II. THE PROJECT

A. Project Background and Objectives

2.01 Project Background. The project originated from sector work on the machinery industries that was undertaken by the Bank in 1978 at the request of the Government. The Bank's sector report ^{/2} presented an evaluation of the competitive capabilities of these industries and outlined a specific set of actions, in the form of a project, that could be taken to improve them (para. 1.16). As a result, in early 1981, the Government completed a study ^{/3} to implement the proposed project. Two Bank preparation missions visited Korea in March and May 1981 to assist the Government in defining the policy studies needed for this project and to discuss with the Government the institutional arrangements to be followed in project implementation. The project was appraised in January/February 1982. After the merger of KOPTEC and SMIPC was announced in May 1982, a mission postappraised the project in June 1982.

^{/1} Loan No. 1800-KO, approved February 19, 1980, IBRD Staff Appraisal Report No. 2723a-KO, dated January 11, 1980.

^{/2} IBRD Report No. 2130-KO, op. cit.

^{/3} Republic of Korea, A Study on Small and Medium Machinery Industry Development Project, February 1981.

2.02 Project Objectives. The proposed project has the following major objectives. Firstly, it provides a context for improving the sectoral policies affecting small and medium industry (SMI) development in general and machinery industries in particular (paras. 1.19-1.28). Secondly, the technical assistance and training included in the proposed project aim at upgrading the technical competence and productivity of machinery industries (paras. 1.16 and 1.17). Thirdly, the proposed project provides the opportunity to build up institutions capable of providing technological assistance to industry (para. 1.18). Finally, the proposed project, through a credit component, provides long-term resources to support the requirements for establishment, expansion, modernization, and balancing of facilities by small and medium machinery producers.

B. Project Description

2.03 The proposed project is part of the Bank's new approach to industrial lending in Korea (paras. 1.29-1.33), has a broad sectoral focus concentrating on a number of the key constraints affecting small and medium machinery industries, and in addition to supporting policy reform, comprises three major components: (a) technical assistance; (b) training; and (c) credit. SMIPC would implement the technical assistance and training component of the project, while three DFCs, KLR, SMIR, and CNB, would implement the credit component.

2.04 Technical Assistance Component. The technical assistance component would consist of providing foreign and domestic consultancy services to assist small and medium machinery producers upgrade their skill levels and improve their productivity at the plant-level by more effectively using existing technology. SMIPC will be in charge of providing such technical assistance. Initially, SMIPC has selected eight technical areas for special attention. These were based on a detailed survey conducted in 1978 /1 and on the Bank's sector report, and include: metal cutting, metal forming, forging, casting, heat treatment, welding, surface treatment, and dyeing and finishing. With the exception of the last two areas, which reflect the Government's intention to upgrade the quality of its textile exports, the other fields all pertain to the machinery industries. Subjects primarily concerned with industrial engineering and manufacturing management, such as, plant layout, machine tool selection, methods analysis (including workplace layout and tool and die design), quality control, machine tool maintenance, and product planning and development, have also been included. Due to the rapid growth and development of Korean industries, the demand for expertise knowledgeable in the above highly specialized fields has outstripped the domestically available supply. It would take some time to develop a supply of such expertise domestically to meet present and expected demand, particularly in view of the rapid rates of growth anticipated in the future. The employment of overseas technical experts is thus essential for the short-term

/1 Report of the Harron Rickard and McCone Co.: Metalworking Manufacturing Engineering Mission to Korea, dated November 1978 (in 16 volumes).

effectiveness of the program. Local consultants will, however, be used in those cases where the appropriate expertise is available in Korea. SMIPC's longer term objective is to develop Korean skills that will substantially decrease the need for overseas specialists. This will be achieved through an explicit provision of staff counterparts for overseas specialists and for providing for the training of domestic counterparts as an integral part of every overseas specialist's terms of reference (para. 3.04). The project also provides for training of Koreans overseas to build up their technical capabilities (para. 3.12). SMIPC, a member of Technonet Asia, an international organization for industrial technology information and extension, also provides technical information services to provide up-to-date technological information (para. 3.07) and conducts research in order to improve business activities and make policy decisions on the promotion of SMI.

2.05 Training Component. The training component would consist of providing training courses on- and off-the-job for target groups in small and medium machinery industries so that their skills and knowledge of production technology may be improved and their productivity enhanced. SMIPC would be in charge of providing such training. Under the project, SMIPC will ensure that technical assistance consultancy services and training are interrelated and focussed on the need to improve productivity and quality of output in firms selected for assistance. For this purpose, SMIPC will establish a small training unit within its Extension Service Department II to coordinate training with the technical assistance being provided. The technical consultants, in collaboration with the training staff, would identify specific training needs associated with the technological/managerial improvements proposed for a selected firm. SMIPC will provide training: (a) directly, using its own specialized facilities at Banwohl or those of other agencies in Korea, to meet general needs of a routine nature (e.g., industrial safety, quality control, plant layout, and standard machine tool usage) and taking advantage of overseas experts it will retain to meet specialized needs; and (b) with other institutions overseas when specialized training is not otherwise available in Korea. Priority target groups for training would be: top managers, engineers, middle managers, and foremen in selected small and medium machinery enterprises. Apart from technical and managerial skill upgrading, the target groups would attend courses in job analysis techniques to promote a strategy of on-the-job training of lower level workers. About 3,300 managerial, supervisory, and engineering staff are expected to be trained during the project implementation period, 1983-86.

2.06 Credit Component. The credit component would provide long-term funds to small and medium machinery industries, as previously defined (footnotes 1 and 2 of para. 1.07). The Government has nominated three DFCs, namely, SMIB, KLB and CNB, to channel the credit component for financing investment requirements as well as for financing technical assistance requirements in project preparation or in upgrading efficiency of operations. Three DFCs have been chosen in order to satisfy the credit needs of small and medium machinery producers of various sizes: KLB for larger medium-sized producers (up to 300 employees); SMIB for small and medium-sized producers

(up to 300 employees); and CNB for small producers (up to 100 employees). The three participating financial institutions have had experience with term lending to small and medium industry, and have also had extensive experience lending to the machinery sector (paras. 3.23, 3.26 and 3.29). The machinery loan portfolio outstanding as of end 1981 of the three DFCs amounted to: W 428.3 billion for SMIB; W 136.5 billion for KLB; and W 54.6 billion for CNB. In 1977-81, foreign currency loans to small and medium machinery industries by the three DFCs amounted to: US\$99.3 million for SMIB; US\$57.2 million for KLB; and US\$6.1 million for CNB. The Bank has had extensive working relationships with each of the three institutions in the context of previous Bank loans. They have all been appraised by the Bank within the last three years,^{/1} and the Bank is fully satisfied regarding their appraisal and supervision capabilities. The appraisal mission examined the machinery industry portfolios of the three institutions, and is satisfied that they are fully competent to carry out their proposed functions under the proposed project (paras. 3.22, 3.25 and 3.28).

C. Project Costs and Financing Plan

2.07 Project Costs. Total project costs amount to US\$119.8 million equivalent, and comprise costs for technical assistance and training, and costs for the credit component, defined as the costs of subprojects which would be financed from the proceeds of the Bank loan. The total costs for the technical assistance and training components, amount to US\$17.4 million and are summarized in Table 2.1 below. Of this total cost, US\$11.0 million represent the foreign currency costs, and were estimated by the mission based on SMIPC's proposed production technology improvement program (PROTIP) activities elaborated in its Operational Plan and projected financial statements. January 1982 prices were used in base cost estimates. Taxes are expected to be negligible. A physical contingency of 5% was made to allow for some degree of uncertainty in the exact magnitude of technical assistance and in the amounts of materials and equipment to be procured by SMIPC; and a 24% allowance for price contingencies was calculated, based on estimated domestic and international rates. Foreign consultancy costs are based on a per manmonth cost of US\$8,750 inclusive of fees, round-trip air tickets, and allow for a mixture of long-term and short-term consultants. Domestic consultant costs are based on estimated fees of US\$1,750 per manmonth. Training costs are based on the experience of other training agencies in Korea, and range from W 2,650 per trainee hour, using Korean instructors, to W 7,760 per trainee hour using expatriates. An amount of W 518 million (US\$0.7 million)

^{/1} See IBRD SAR No. 3382-KO, The Small and Medium Industry Bank (SMIB IV), dated April 24, 1981; IBRD SAR No. 3115-KO, The Korea Long-Term Credit on Bank (KDFC VIII), dated November 20, 1980; and IBRD SAR No. 3820-KO The Citizens National Bank (CNB II) dated March 5, 1982.

Table 2.1: ESTIMATED PROJECT COSTS

Expenditure Category	Local currency ----- W	Foreign currency million	Total -----	Local currency -----	Foreign currency US\$ million	Total -----	Foreign as % of total costs
<u>Technical Assistance</u>							
Foreign consultants	589	5,772	6,361	0.8	7.8	8.6	91
Domestic consultants	341	-	341	0.5	-	0.5	0
Tools and equipment	583	370	953	0.8	0.5	1.3	39
Tech. info. & studies	638	107	745	0.9	0.1	1.0	17
Subtotal	<u>2,151</u>	<u>6,249</u>	<u>8,400</u>	<u>3.0</u>	<u>8.4</u>	<u>11.4</u>	<u>73</u>
<u>Training</u>	<u>1,056</u>	<u>518</u>	<u>1,574</u>	<u>1.4</u>	<u>0.7</u>	<u>2.1</u>	<u>33</u>
Base Cost for Technical Assistance and Training (January 1982 prices)	<u>3,207</u>	<u>6,767</u>	<u>9,974</u>	<u>4.4</u>	<u>9.1</u>	<u>13.5</u>	<u>67</u>
<u>Contingencies for TA and Training /a</u>							
Physical	160	332	492	0.2	0.5	0.7	66
Price	1,280	1,129	2,409	1.8	1.4	3.2	45
Subtotal	<u>1,440</u>	<u>1,461</u>	<u>2,901</u>	<u>2.0</u>	<u>1.9</u>	<u>3.9</u>	<u>49</u>
Total Cost for Technical Assistance and Training	<u>4,647</u>	<u>8,228</u>	<u>12,875</u>	<u>6.4</u>	<u>11.0</u>	<u>17.4</u>	<u>63</u>
<u>Credit Component /b</u>							
SMIB	11,256	21,460	32,716	15.2	29.0	44.2	66
KLB	13,898	14,800	28,698	18.8	20.0	38.8	52
CNB	6,956	7,400	14,356	9.4	10.0	19.4	52
Total Credit Component	<u>32,110</u>	<u>43,660</u>	<u>75,770</u>	<u>43.4</u>	<u>59.0</u>	<u>102.4</u>	<u>58</u>
Total Project Costs /c	<u>36,757</u>	<u>51,888</u>	<u>88,645</u>	<u>49.8</u>	<u>70.0</u>	<u>119.8</u>	<u>58</u>

/a Physical contingencies are about 5% of base cost; domestic price contingencies are about 38% and international price contingencies about 15% of the respective base cost plus physical contingencies. Taxes are expected to be negligible.

/b Defined as the costs of subprojects financed under the proposed Bank loan. Proportions between local and foreign currency costs derived from sample data of the three DFCs.

/c Bank loan assumed to be US\$70 million.

was included in the estimate of foreign exchange costs for training, but this is less than the total training that will be provided, as it is anticipated that foreign consultants will also provide training as part of their jobs (paras. 2.04 and 3.04). The costs for the credit component are estimated at US\$102.4 million. The costs for the credit component were based on the projections of the DFCs prior to the financial measures of end June 1982 but the Bank has been informed by the DFCs during negotiations that the projections would remain substantially unchanged since Bank funds would satisfy a relatively small proportion of total resources required by machinery industries in Korea, and since there are regulations on the use of foreign exchange for the import of foreign machinery and equipment.

2.08 Financing Plan. The proposed Bank loan of US\$70 million would be made to the Government and allocated as follows. The US\$11 million to be allocated to SMIPC would finance 100% of the foreign exchange costs of SMIPC in providing technical assistance and training in 1983-86. The balance of US\$59 million would be allocated to the three participating DFCs for the credit component and would finance about 40% of estimated foreign exchange requirements of machinery loan commitments in 1983-85, which have been estimated at US\$629.6 million equivalent with the foreign exchange component at US\$160.5 million equivalent for the three DFCs combined (Annex 3). The US\$59 million credit component would be allocated as follows: US\$29 million for SMIB, US\$20 million for KLB, and US\$10 million for CNB. Bank finance for the proposed project, would be channeled to each of the three DFCs and SMIPC through subsidiary loan agreements. The signing of subsidiary loan agreements on terms and conditions satisfactory to the Bank, would be a condition of effectiveness of the proposed loan. The relending terms are described in paras. 4.06 to 4.08. The balance of the projected lending by the three DFCs, for the machinery industry would be met from their own resources, including other foreign borrowings.

2.09 During negotiations, the Government confirmed that it would provide adequate financial support to SMIPC and its PROTIP activities. The Government would provide SMIPC with funds needed to service its portion of the loan, and the Government has given assurances that this funding requirement would not be used to reduce the Government's contributions to SMIPC's project operations. Moreover, the Government agreed that it would review with SMIPC prior to the completion of the preparation of the Government's annual budget beginning with SMIPC's 1983 fiscal year, SMIPC's requirements for local currency funds to meet SMIPC's overall objectives, including those objectives under the proposed project, planned for the following fiscal year. On the basis of each such review, the Government would exchange views with the Bank on the level and timing of the Government's financial support to SMIPC for the following year, taking into account SMIPC's financial prospects and work program (para. 3.17).

III. PROJECT IMPLEMENTATION

A. Technical Assistance and Training: The Small and Medium Industry Promotion Corporation (SMIPC)

3.01 SMIPC was established by the Government in January 1979, under the Small and Medium Industry Promotion Act, as an autonomous public corporation to carry out a wide range of financial and technical assistance programs for SMIs in Korea. SMIPC has responsibility for administering the Small and Medium Industry Promotion Fund (SMIPF) and undertaking assistance programs with the resources of the Fund. These programs include, among others, the provision of: (i) financial assistance (through financial institutions, primarily SMIB) and field services to support modernization plans of SMIs and SMI cooperatives, including modernization of folk art and crafts manufacturers and leasing of equipment; (ii) industrial extension services concerning management and technology to SMIs; (iii) training for SMI managerial and technical staff and training for managerial and technical extension workers; and (iv) collection, analysis, and dissemination of business and technical information for SMI. In 1981, the Asian Development Bank (ADB) extended to SMIPC a US\$13.0 million loan to support the development of SMIPC's Training Institute in Banwohl. The ADB loan has been used to finance: (a) laboratory and workshop equipment, accessories, and spares; audio-visual, electronic data processing, and electronic computing equipment; (c) training reference and information materials; (d) consultancy services; and (e) overseas staff training. Project implementation has progressed satisfactorily, and the first phase of the construction of the Training Institute is expected to be completed in 1982. Training courses for entrepreneurs and extension workers will be moved to Banwohl by end 1982, and technical training courses, for which the workshop complex at Banwohl is being built and equipped, will be moved to Banwohl in early 1984.

3.02 SMIPC has achieved a respectable record in its assistance activities since its establishment in 1979. In a study conducted in August 1981 by the Ministry of Commerce and Industry regarding the effectiveness of SMIPC's extension services, 962 enterprises were interviewed, out of more than 2,500 SMI enterprises which took advantage of SMIPC's services from January 1979 to July 31, 1981. Of the 958 which responded, an overwhelming 84% reported that SMIPC's services have been effective in: improving managerial control (26%), improving product quality (23%), improving productivity (17%), developing technology (10%), and reducing costs (9%). In May 1982, the Government took action to effectively merge KOPTEC into SMIPC, and in November 1982, the Machinery Industry Promotion Law was amended formally merging the two institutions. SMIPC has taken over both the staff and functions of KOPTEC by creating an Extension Service Department II within SMIPC to continue KOPTEC's activities.

3.03 Objectives and Functions. SMIPC's Policy Statement (Annex 4) sets forth its role as the primary institution charged with promoting the efficient development of small and medium industries in Korea, and thus, with contributing to the balanced development of the national economy. The Policy Statement sets forth SMIPC's main activities (para. 3.01) and identifies its clientele as all SMI and SMI cooperatives. It sets out SMIPC's general principles of operation, including its organization, management, and staffing, its relationship with other agencies, and auditing procedures. SMIPC's Strategy Statement for Production Technology Improvement (PROTIP) for the Machinery Industries, 1983-86 (Annex 5), outlines SMIPC's objective of concentrating its production technology improvement on the machinery industries during 1983-86 because of the latter's anticipated significant role in export and growth targets of the Korean economy during the Fifth Plan. It sets forth SMIPC's definition of machinery clientele, the priority areas of assistance, criteria of selection of firms to be assisted, the method of assistance, principles of cost recovery, and its intention to retain the assistance of a consultancy firm to assist its PROTIP activities. These statements were discussed during negotiations, and they were approved by SMIPC's Board of Policy in November 1982. Under this project, SMIPC would administer a comprehensive production technology improvement program (PROTIP), primarily for the machinery industries, by: (a) identifying and rectifying common problems in priority areas; (b) providing guidance and consultancy service on plant level technology using domestic and foreign experts; (c) gathering and disseminating information on production technology required to break production bottlenecks; (d) conducting feasibility studies and providing advice regarding technical feasibility to firms on the latter's investment plans for new or expanded facilities and to financial institutions who need assistance in making financing decisions; and (e) arranging for domestic and overseas training to strengthen skilled manpower in the machinery sector and coordinating training of key target groups with other agencies in Korea who provide training. These functions are discussed in the following paragraphs (paras. 3.04-3.07).

3.04 SMIPC, through its Extension Service Department II, has been continuing KOPTEC's PROTIP activities by providing technical assistance through its own staff and foreign and domestic consultants. To assist it in engaging foreign consultants, it has engaged foreign consultant coordinators who have been selected for their past experience and for the extensive contacts they possess in the sector in their own countries. The success record of the foreign coordinators in helping to recruit appropriate foreign expertise for PROTIP activities has been mixed. As SMIPC's PROTIP operations grow in numbers and complexity, it is essential that it should retain on a full-time basis a consultancy firm to assist it to: (a) provide foreign experts with detailed terms of reference for individual assignments; (b) monitor the performance of individual foreign experts; (c) train SMIPC staff in consultancy skills; and (d) set up a training unit within SMIPC. Draft terms of reference for such a consultancy firm have been discussed with SMIPC by the mission. Such a consultancy firm would initially supplement, and subsequently supplant, to a large extent, the use of foreign consultant coordinators.

Terms of reference for this consultancy firm have been discussed with SMIPC and an understanding reached that the consultancy firm would be hired for an initial period of two years, with possible extension for a third year, for a total of 48 months initially. SMIPC would hire a consultancy firm satisfactory to the Bank, on terms and conditions satisfactory to the Bank, by March 31, 1982.

3.05 The major areas of PROTIP activities selected by SMIPC have been discussed in para. 2.04. In the first 15 months of operations since the program's inception in January 1981, PROTIP as administered by KOPTEC had assisted more than 100 selected firms in the machinery industries as follows: 71 in metal cutting (including metal forming and welding), 13 in forging, 16 in casting, 15 in surface treatment, and 4 in process control. In addition, 15 firms in the textile industry were assisted in dyeing and finishing operations. SMIPC plans to continue the PROTIP program and assist about 660 firms in the period 1983-86 under the program, of which some 120 firms would be assisted in more than one of the areas mentioned above. SMIPC is in the process of formalizing a monitoring system to measure the benefits of its technical assistance efforts. Such a monitoring system will measure quantitatively the benefits (increased value added, productivity improvements, savings, etc.) which result from the program's technical assistance efforts. The consultancy firm to be retained by SMIPC to help it implement PROTIP (para. 3.04) will further assist it to install and implement such a monitoring system. SMIPC's intention to formalize such a monitoring system was confirmed during negotiations.

3.06 To assist SMIPC focus on in situ training in the small and medium machinery enterprises, the terms of reference of the consultancy firm would include responsibilities for helping SMIPC set up the training unit and develop curricula (para. 3.04). SMIPC has agreed to assign staff to coordinate technical assistance with training. The technical consultants, in collaboration with SMIPC's training staff assigned to its Extension Service Department II (para. 2.05), would identify specific training needs associated with the technological and managerial improvements proposed for a selected firm. The purpose is to promote an overall strategy for on-the-job training throughout the small and medium machinery industry enterprises. Supervisory staff would be trained to develop on-the-job schemes for their subordinates on the production floor, thus ensuring implementation of the technological improvements proposed by the technical assistance consultants. On the basis of the annual number of firms to be assisted as specified in SMIPC's plans, an estimated 3,300 managerial, supervisory and engineering staff will benefit from SMIPC's training programs in 1983-86 under PROTIP.

3.07 SMIPC has a system to provide technical information and a ready reference service for firms when needed. It does this by locating and acquiring know-how (technical knowledge) to solve plant level problems, and by utilizing, on a current basis, information sources in the developed countries such as technical journals, reports of technical societies, official publications and other scientific and technical papers. As a member organization of Technonet Asia, SMIPC also has access to Technonet's information system.

3.08 Organization and Management. The Board of Policy is the highest decision-making body within SMIPC. It is composed of a Chairman and a maximum of 20 members. The Chairman is the President of SMIPC, who is appointed by the President of the Republic upon recommendation of the Minister of Commerce and Industry (MCI). Other Board members are appointed by the Minister of MCI from among the officials of the Economic Planning Board, the Ministries of Finance (MOF), Commerce and Industry (MCI), Construction (MOC), and Science and Technology (MOST), and representatives of financial institutions, business associations, and private sector representatives who are knowledgeable and experienced in the field of SMI. SMIPC is under the overall guidance of MCI in matters pertaining to Government policy. The seven private sector (including business associations and individual entrepreneurs) representatives and two representatives from the academia on SMIPC's Board are sufficient to represent private sector views in SMIPC's operations. Realizing the importance of adequately reflecting private sector views to enable it to be more responsive to private sector needs, SMIPC has indicated that it would: (a) increase private sector representation on its Board of Policy, especially from SMI machinery producers, when vacancies occur;^{/1} (b) participate in a coordinating council comprising SMIPC and the three participating financial institutions (para. 3.30); and (c) continue and strengthen its regular and systematic fora with the private sector. SMIPC has confirmed these understandings.

3.09 The President of SMIPC has been delegated substantial autonomy over all aspects of administration of SMIPC. SMIPC's President/Chairman is Dr. Chong-Yul Yoo, who has advanced engineering degrees. His most recent post has been as an economic advisor in the Office of the President. He is assisted by four capable Directors of varied backgrounds and experience. Each of these Directors is responsible for a group of departments performing SMIPC's main activities: (a) Information and Administration; (b) Extension Services; (c) Training; and (d) Modernization Projects. The Director of Administration is responsible for planning, research, security and safety, public relations and general administration. In addition, he is in charge of administering local branch offices at Pusan and Kwangju, and overseas offices in Frankfurt, Tokyo, and New York and PROTIP offices in the United Kingdom and Worcester, Massachusetts. The Director of Extension Service Departments is responsible for programming and implementation of industrial extension services for SMIs, including PROTIP for the machinery industries envisioned under this project. The Director of Projects is responsible for promoting modernization and cooperative projects among SMIs. The Director for Training is the Dean of the Small and Medium Industry Management and Technology Institute (The Training Institute) and is responsible for programming and implementation of training for SMI management and labor, for training and certifying extension workers, SMI planners, and for administration of the Training Institute at Banwohl.

3.10 The two Directors of SMIPC of particular relevance to the Bank project are: (a) the Dean of the Training Institute; and (b) the Director of

^{/1} Normal term of Board Directors is three years.

the Extension Service Departments. Both are competent and suitable. The Dean of the Training Institute is Mr. Cho Il-Mook. Prior to joining SMIPC as Director in 1979, Mr. Cho was Director of the Technical Qualification Bureau, Korea Technical Qualification Agency. Mr. Cho has advanced university degrees in chemical and industrial engineering. The Director of the Extension Service Departments is Mr. Kim Kye-Ho. Mr. Kim has had 23 years of plant operations and management experience in the private sector. Prior to his present appointment, Mr. Kim was Director of KOPTEC's Technical Assistance Department, in charge of PROTIP activities.

3.11 SMIPC's organizational structure (see Organization Chart) is basically sound. The integration of PROTIP activities, formerly administered by KOPTEC, into a unit in SMIPC called Extension Service Department II, which has also absorbed KOPTEC's staff, to be responsible for the provision of foreign consultancy services appears to be appropriate for the time being. Presently, the Extension Service Departments are organized according to sources of consultants, with Extension Service Department I focussing on domestic consultants and Extension Service Department II on foreign consultants. After the initial merger period, the Extension Service Departments would be reorganized along subsectoral lines, with Extension Service Department II focussing primarily on the machinery industries and Extension Service Department I focussing on priority industries other than machinery industries. Each Extension Service Department would then use available sources of consultancy services, both foreign and domestic, to provide managerial and technological extension services. SMIPC has agreed that the reorganization of SMIPC's Extension Service Departments would be made along subsectoral lines by March 31, 1982. To facilitate the administration of the proposed loan and monitor the extent of Government budgetary support in local currency to support the project, SMIPC has agreed to maintain separate accounts in SMIPC for the Extension Service Department II.

3.12 Staff. SMIPC is empowered to recruit and appoint its own staff. As of June 1982, SMIPC had a staff of 312 persons, including 6 executives, 58 at manager and deputy manager levels, 66 at section chief and assistant chief levels, and 182 lower grade staff, including support staff. Of the 219 professional staff, 103 have backgrounds in economics, business administration, and other social sciences while 116 have backgrounds in applied sciences, and include 34 mechanical engineers, 17 chemical engineers, 22 metallurgists, 6 electrical engineers, 4 electronic engineers, 9 textile engineers, 10 civil and construction engineers, and 16 staff with degrees in natural and physical sciences. Of the 98 staff in the Training Institute, 25 are permanent teaching staff, 43 are professional staff involved in administration, and 30 are support staff, which include workshop operators and laboratory technicians. In addition, there are 45 part-time teaching staff attached to the Training Institute. Of the 32 staff in the Extension Service Department II, which will be in charge of PROTIP activities, 20 are engineers, each representing one or two technical fields assisted by PROTIP, e.g. 4 in metal cutting, 3 in metal forming, 2 in casting, and 1 each in forging, heat treatment, surface treatment, welding, dyeing and finishing, industrial engineering, production control, and numerical control. These engineers have all had

substantial working experience and held senior engineering positions in Government institutions or private industry prior to joining PROTIP activities. The staff presently involved in extension services, particularly those involved in PROTIP activities, are appropriately qualified to handle the existing volume of technical assistance operations. SMIPC intends to expand the staff in its Extension Service Departments as necessary to cope with future workload. To improve its capabilities, particularly those involved in PROTIP activities, SMIPC has worked out a comprehensive five-year overseas training program for periods ranging from 2 to 6 months in order to upgrade its staff expertise in their respective professional fields. Highest priority will be assigned to those staff involved with providing extension services, especially those involved in PROTIP activities. In addition, training programs have been designed to improve nontechnical skills of SMIPC staff, such as foreign language proficiency, and management consultancy skills. SMIPC has confirmed its staffing plans and staff training programs to ensure healthy institutional growth and proper implementation of the project.

3.13 SMIPC's pay scales are determined by its Board. They are comparable to those of Government research institutes and Government banks, and are substantially higher than most Government agencies. The salaries and benefits are appropriate for the type of staff needed by SMIPC to effectively provide its services. SMIPC has confirmed that it would maintain, and periodically review, its salary and benefit structure so that these would be sufficient to attract and retain high quality staff to provide the type of services needed by SMIs.

3.14 Financial Projections. SMIPC's projected financial statements are presented in Annex 6, Tables 1 to 3, and are summarized briefly in the following paragraphs. The projected income statements are presented as Table 3.1 below. SMIPC's main income source stems from revenues generated from financing activities using the proceeds of the SMIPF, of which SMIPC is the implementing agency. Financing activities are carried out by handling banks on SMIPC's account. Another major source of income is SMIPC's leasing program. Under this program, SMIPC makes available to small and medium industries on an installment rental basis and in cases of replacement or renovation the following: basic equipment to increase productivity; testing equipment to improve quality control; and common facilities for joint use by SMIs. SMIPC's revenues are projected to grow rapidly from W 9.4 billion in 1983 to W 22.5 billion in 1986 and W 52.3 billion in 1991, amounting to W 268.5 billion over the period 1983-1991. Of these revenues, direct fees from PROTIP activities are expected to increase from a projected W 0.4 billion in 1983 to W 0.9 billion in 1991, or a total W 6.6 billion over the period 1983-1991.

3.15 Revenues from extension services are limited. SMIPC has been providing extension services and training either free of charge or at nominal rates in accordance with Government policy to promote and accelerate the development of small and medium industries in Korea. However, as a result of this project, SMIPC and the Government have agreed to initiate a program which would ensure a steadily increasing cost recovery for its services. It

Table 3.1: SMIPC: SUMMARY OF PROJECTED INCOME STATEMENTS 1982-91
(W billion)

	1982 budgeted	1983	1984	1985	1986	1987	1988	1989	1990	1991
	----- projected -----									
<u>Income</u>										
Revenues from financing	5.6	6.6	7.0	10.3	13.4	16.5	19.8	23.2	26.3	29.1
Revenues from cooperatives project	5.6	0.4	0.4	0.9	0.9	1.1	1.0	0.9	0.8	0.8
Revenues from leasing project	0.6	1.5	2.8	4.4	6.1	8.3	11.0	12.5	15.8	17.1
Revenues from extension services and PROTIP	0.1	0.4	0.8	0.8	0.6	0.7	0.8	0.8	0.8	0.9
Other revenues	0.3	0.5	0.9	1.5	1.5	2.9	3.3	3.7	4.4	4.4
<u>Total income</u>	<u>12.2</u>	<u>9.4</u>	<u>11.9</u>	<u>17.9</u>	<u>22.5</u>	<u>29.5</u>	<u>35.9</u>	<u>41.1</u>	<u>48.1</u>	<u>52.3</u>
<u>Expenses</u>										
Financing	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Cooperative projects	5.7	-	-	0.4	0.4	0.4	0.7	0.7	0.7	0.7
Training	1.5	1.8	2.0	2.0	2.0	2.2	2.4	2.6	2.9	3.0
Extension services and PROTIP	4.2	5.9	7.5	8.5	9.0	10.0	10.8	11.6	11.4	11.4
Technical and regional development	0.2	0.4	0.8	1.1	1.4	1.7	2.0	2.3	2.6	2.7
Information	0.9	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5
Branches and overseas offices	0.5	0.5	0.6	1.0	1.1	1.4	1.6	1.6	1.7	1.8
Leasing Project costs	0.8	1.9	3.4	4.7	6.6	8.1	9.4	10.8	12.1	13.0
Salaries	3.0	3.7	4.5	4.9	5.2	5.7	6.2	6.7	7.3	7.8
Overhead	1.3	1.1	1.3	1.4	1.5	1.5	1.6	1.8	1.9	2.0
Other	0.3	1.1	1.3	1.5	1.6	1.6	1.4	1.3	1.0	0.9
<u>Total expenses</u>	<u>18.5</u>	<u>17.1</u>	<u>22.3</u>	<u>26.5</u>	<u>29.9</u>	<u>33.9</u>	<u>37.5</u>	<u>40.9</u>	<u>43.2</u>	<u>45.1</u>
<u>Net Income (Loss)</u>	(6.3)	(7.7)	(10.4)	(8.6)	(7.4)	(4.4)	(1.6)	0.2	4.9	7.2

is SMIPC's long-term goal to charge full direct costs in its PROTIP activities (see SMIPC's Strategy Statement, Annex 5). However, SMIPC is a fairly new institution and PROTIP is a new concept in Korea, and at present, Korean SMIs are not accustomed to paying for technical assistance. Thus, the principle of cost recovery needs to be introduced gradually. SMIPC's cost recovery strategy for its PROTIP activities is to gradually increase its charges and to differentiate the charges according to the nature of the client and whether it is large or small, a repeat customer or not, etc. For extension services provided by domestic consultants, SMIPC's plan is to provide such services free of charge for the years 1983-86, and then to charge 10% of direct costs from 1987 onward. For extension services provided by foreign experts, and for extension services under PROTIP, SMIPC's proposal is to charge an average of 30% of direct costs by 1986, and to increase the percentage of direct cost recovery by 10% each year until it reaches 80% by end of 1991. For training, SMIPC plans to charge 70% of direct costs during 1983-86, and to increase it to 80% of direct costs during 1987-91. For SMI staff and on-the-job training, SMIPC plans to charge 30% during 1983-86, and 50% in 1986 and thereafter. This gradualist approach to cost recovery is reasonable in the early stages of SMIPC's development; it is also consistent with the promotional nature of SMIPC's extension services and training activities.^{/1} SMIPC has confirmed its proposals for direct cost recovery for its PROTIP activities (Annex 6, Table 4), and these are reflected in the loan documents.

3.16 The major expense items in SMIPC's income statement projections stem from extension services, training, and equipment leasing. Extension services expenses are high due to the high costs of foreign consultant services, which are not presently available in Korea. Leasing operations are expected to break even by 1987. Salaries and overheads constitute around 8-9% of total expenses, which is reasonable. SMIPC's expenses have been projected to grow from W 17.1 billion in 1983 to W 29.9 billion in 1986, and W 45.1 billion in 1991. Of these expenses, direct costs for PROTIP technical assistance are expected to be W 2.6 billion in 1983, increasing to W 2.7 billion in 1985, and gradually decrease to W 1.3 billion in 1991, totalling W 19.2 billion over 1983-1991. Training in conjunction with PROTIP is expected to cost about W 189 million in 1983, declining to W 156 million in 1991 as PROTIP-type training is increasingly integrated into SMIPC's regular training activities. Training under PROTIP is expected to total W 1.4 billion over 1983-1991. SMIPC has projected losses through 1988. However, after reaching a W 10.4 billion loss in 1984, the losses are projected to gradually decline to W 1.6 billion in 1988. SMIPC will start realizing a modest W 0.2 million income in 1989, and its income is expected to increase to W 7.2 million in 1991.

^{/1} This is in line with gradualist approach to cost recovery or totally free industrial extension services currently practiced in a number of developed countries.

3.17 SMIPC's projected summary funds flow statements are presented in Table 3.2. The major source of SMIPC's funds is Government budgetary contributions, part of which will be financed from the proceeds of the proposed Bank loan. These budgetary resources are necessary for SMIPC's operations since SMIPC's revenues do not match its expenses in the initial years of operation. Government contributions are forecast to increase from W 24.9 billion in 1982 (W 2.9 billion has been allocated for PROTIP activities) to W 58.8 billion in 1987, and decline gradually to W 42.6 billion in 1991. The gradual decline in Government contributions coincides with increasing operating revenues, which are expected to surpass in magnitude the amounts of Government allocations in 1990. The amounts budgeted for 1982 have been approved, and the Ministry of Commerce and Industry has requested an amount of W 200 billion during the Fifth Plan period (1982-86) to support small and medium industry development. Over the projection period until 1991, W 500 billion has been allocated for small and medium industry development and in addition, W 26.3 billion has been allocated for PROTIP activities. The Government has undertaken to ensure that SMIPC would be given adequate financial support to carry out its overall objectives and that SMIPC, in turn, would devote sufficient resources (including domestic currency) to enable the realization of the objectives of the proposed project during the project implementation period. The Government has confirmed its intention to provide SMIPC with adequate resources to service its debt under the proposed project and for SMIPC's overall activities.

3.18. On the basis of SMIPC's projected operations and the levels of Government's proposed support, balance sheets for SMIPC have been constructed. Total assets are expected to grow from W 91.9 billion in 1982 to W 518.9 billion in 1991. These increases in assets are funded primarily from Government contributions. Cumulative Government contributions to SMIPC, inclusive of W 26.3 billion for PROTIP activities, will total W 526.3 billion by the end of 1991. The projected balance sheets are shown in Annex 6, Table 3.

3.19 Accounting and Audit. SMIPC carries out its operations with due consideration to financial prudence and maintains its accounting records to reflect its operations and affairs in accordance with sound accounting principles and standards, which are satisfactory to the Bank. As SMIPC is responsible for administering and operating the Small and Medium Industry Promotion Fund (SMIPF) and for proper usage of contributions from the private sector, SMIPC maintains an SMIPF Account and a General Account. With regard to SMIPF, SMIPC is required under the Small and Medium Industry Promotion Act to prepare an administrative and operational plan and submit it to the Minister of Commerce and Industry for approval at least two months before the beginning of each financial year. SMIPC also has to submit its annual budget to the Minister of Commerce and Industry for approval after clearance by its own Board of Policy.

3.20 The Auditor of SMIPC is appointed by the Minister of Commerce and Industry. A set of SMIPC's audited financial statements has to be submitted to the Minister not later than three months after the close of every financial

Table 3.2: SMIPC: SUMMARY PROJECTED CASH FLOW STATEMENTS, 1982-91
(W billion)

	1982 budgeted	1983	1984	1985	1986	1987	1988	1989	1990	1991
	----- projected -----									
<u>Sources of Funds</u>										
Government contributions	24.9	37.2	39.0	51.3	58.3	58.8	58.4	53.0	47.8	42.6
Borrowings	3.6	6.4	4.8	2.7	-	-	-	-	-	-
Revolving Fund	2.5	11.4	20.1	8.2	13.6	21.4	29.2	38.1	44.9	52.8
Operating Revenues	8.2	8.9	11.4	16.9	21.5	28.0	34.4	39.6	46.1	50.3
Non-operating Revenues	0.2	0.5	0.5	1.0	1.0	1.5	1.5	1.6	2.0	2.0
Depreciation	0.8	1.7	1.0	2.0	1.1	1.5	1.3	1.3	1.2	0.8
Retirement allowances and others/a	15.3	0.3	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.9
<u>Total Sources of Funds</u>	<u>55.5</u>	<u>66.4</u>	<u>77.2</u>	<u>82.6</u>	<u>96.0</u>	<u>111.8</u>	<u>125.5</u>	<u>134.3</u>	<u>142.8</u>	<u>149.4</u>
<u>Uses of Funds</u>										
Modernization projects	28.2	37.4	44.6	47.3	55.4	64.4	71.6	74.7	77.4	81.1
Training and Training Institute	11.4	7.6	4.1	1.6	1.6	1.9	2.1	2.3	2.6	2.8
Extension Services and PROTIP	4.3	6.2	8.0	9.3	10.7	11.6	12.3	13.0	12.7	12.6
Technical development and regional projects	-	0.1	2.8	3.6	6.6	9.5	12.4	15.3	18.2	19.2
Subcontracting support	-	4.3	5.0	5.1	5.1	6.1	7.1	8.1	9.1	10.1
Folkcraft and rural industry	0.8	1.7	3.3	3.8	4.9	5.4	5.9	6.5	7.0	7.6
Information	0.9	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.5
Administration	5.0	5.4	6.3	7.3	7.7	8.7	9.4	10.2	11.1	11.9
Debt service and others	2.4	1.1	1.1	1.4	1.6	1.3	1.9	1.3	1.8	1.3
<u>Total Uses of Funds</u>	<u>53.0</u>	<u>64.4</u>	<u>75.9</u>	<u>80.2</u>	<u>94.5</u>	<u>109.9</u>	<u>123.8</u>	<u>132.6</u>	<u>141.2</u>	<u>148.1</u>
Surplus/(Deficit)	2.5	2.0	1.3	2.4	1.5	1.9	1.7	1.7	1.6	1.3
Cumulative Surplus/ (Deficit)	2.5	4.5	5.8	8.2	9.7	11.6	13.3	15.0	16.6	17.9

/a In 1982, the figure includes cash carry over of W15.2 billion from 1981.

year. The Auditor, assisted by three Auditing Officers, undertakes auditing of SMIPC's financial accounts and operations and reports to the Minister through the President of SMIPC. According to the Law of the Board of Audit and Inspection in 1963, SMIPC's financial statements are also externally audited by the Board of Audit and Inspection. For its ADB project, SMIPC has agreed to employ independent auditors to audit a separate ADB project account and SMIPC's overall financial statements. SMIPC has similarly agreed to maintain a separate account for this project and to employ independent auditors acceptable to the Bank. SMIPC will submit to the Bank certified copies of SMIPC's audited statements and auditor's reports relating to the project, as well as SMIPC as a whole, in a format acceptable to the Bank, not later than five months after the close of every fiscal year.

B. Credit Component: The Participating Financial Institutions

3.21 The Small and Medium Industry Bank (SMIB). SMIB is a Government-owned banking institution, incorporated under the Small and Medium Industry Bank Act of 1961. It is one of the three DFCs which the Government has designated as channels for the credit component of the project (para. 2.06). In addition to term lending and the extension of technical assistance, SMIB engages in a wide range of commercial banking activities such as the mobilization of deposits, issue of letters of credit, provision of overdraft facilities, discount of trade bills as well as other short-term lending operations for working capital purposes. The SMIB Act restricts SMIB to the financing of small and medium enterprises. According to the Presidential Decree enforcing the Act, eligible borrowers are defined, since 1976, as enterprises with assets not in excess of W 500 million or with less than 300 employees./1

3.22 The Bank has extended four loans to SMIB and considers it a sound institution and its staff fully competent to carry out its responsibilities under the proposed loan (para. 2.06). Basic data for SMIB regarding its financing structure and performance and its performance under previous Bank loans are shown in Annex 7, Table 1.

3.23 SMIB's lending to projects in the machinery sector (5,427 loans amounting to W 428.3 billion) accounted for 14% by number and 29% by amount of its total outstanding loan portfolio as of December 31, 1981. On the basis of a limited sample of subprojects, foreign and domestic currency requirements accounted for 64% and 36%, respectively, of total fixed investment cost. Working capital requirements absorbed around 19% of total project cost. About 65% of total project costs were financed from SMIB resources, while the owners contributed the remainder in the form of equity and internal cash generation. According to the sample, most of the subprojects produced almost exclusively for the domestic market as indicated by the sample's export share of 8% of

/1 The SMI Promotion Law enacted in 1979 raised the employment ceiling to 500 (with no asset limit) for specific industries in the manufacturing sector such as automobile and bicycle parts, hand tools, and watches.

total sales. The subprojects' incremental jobs were generated at a cost of about US\$25,000 each. Financial rates of return (FRR) ranged from 19% to 43% with a weighted average of 28%, and economic rates of return (ERR) ranged from 26% to 65% with a weighted average of 45%.

3.24 The Korea Long-Term Credit Bank (KLB). KLB was established in 1967 as the Korea Development Finance Corporation (KDFC) with the active support of the World Bank Group as a joint venture between domestic and foreign investors including IFC. In 1977, in seeking to improve its financial services to meet the requirements of the financial sector, KDFC initiated an internal study of optional strategies. As a result of this study, KLB was converted into a long-term credit bank, the first of its kind under the Long-Term Credit Bank Law enacted in December 1979. Its Charter, adopted on June 2, 1980, authorizes it to engage in business activities such as debenture issues both in Korea and abroad, acceptance of deposits and installment savings (for its customers only), discount and rediscount at BOK of trade bills, working capital financing, term lending for investment purposes, securities business, and domestic and foreign exchange transactions.

3.25 The Government has nominated KLB as one of the three channels for the credit component of the proposed loan. The Bank has extended eight loans to KLB, and considers it a sound institution and its staff fully competent to carry out its responsibilities under the proposed loan (para. 2.06). Basic data for KLB are attached in Annex 7, Table 2.

3.26 KLB's overall lending to projects (270 loans amounting to W 136.5 billion) in the machinery sector, irrespective of size, accounted for 21% by number and 17.8% by amount of its total outstanding loan portfolio as of December 31, 1981. On the basis of a sample of SMI projects, KLB has financed an average of 49.8% of total project cost, while 13.1% was financed from the owners' equity resources. The projects in the sample had an incremental cost per job of around US\$51,400. The FRR ranged from 22% to 55% with a weighted average of 23%, whereas the ERR ranged from 14% to 49%, with a weighted average of 26%.

3.27 The Citizens National Bank (CNB). CNB was incorporated in December 1962 under the Citizens National Bank Act as a broad-based financial institution which caters to the financial needs of the general populace and small businesses and attracts small household savings as part of a national effort to mobilize domestic capital for economic development. In accordance with its charter, CNB finances small-scale businesses with less than 100 employees. In addition to the maximum exposure limits in any single enterprise of 25% of its equity, CNB's domestic currency lending to any single enterprise is limited to: W 250 million for equipment loans; W 150 million for working capital loans; and W 50 million for guarantees (W 500 million for guarantees involving foreign exchange transactions). CNB's Development Strategy for 1982-86 focussed on the promotion of small and labor-intensive projects, geographic dispersal, raising of long-term domestic currency resources, increasing term

lending to SMI, and diversifying its sources of long-term foreign currency resources, and strengthening of its research activities in the area of sector and market studies.

3.28 CNB has been nominated by the Government to be one of the three channels for the credit component of the proposed loan. The Bank has extended two loans to CNB. The Bank considers CNB a sound institution and its staff fully competent to carry out its responsibilities under the proposed loan (para. 2.06). Basic data for CNB are attached in Annex 7, Table 3.

3.29 CNB's lending to projects in the machinery sector (4,761 loans amounting to W 54.6 billion) accounted for 8.6% and 10.8% by number and amount of CNB's total business loan portfolio (including working capital loans) as of December 31, 1981. On the basis of a limited sample of subprojects, CNB has financed an average of 49.7% of total project costs, while shareholders contributed 14.9% and 4.3% in the form of equity and shareholders' loans respectively. The average cost per incremental job amounted to about US\$15,500. Based on a limited sample of machinery subprojects, the FRR of these subprojects ranged from 22% to 27% with a weighted average of 25% and the ERR ranged from 33% to 46%, with a weighted average of 42%.

3.30 Relationship between Technical Assistance and Credit Components. While successful small and medium machinery enterprises requiring only funds would be eligible for loans under the credit component of the project, the greatest impact would be achieved in the case where subloan recipients of the three DFCs are also the technical assistance clients of SMIPC's PROTIP activities. As SMIPC's PROTIP activities are relatively new, and SMIPC may need time to build up its clientele, the initial overlap between SMIPC's clients and those of the financial institutions may be small; but it is expected that such an overlap will increase significantly toward the end of project implementation. SMIPC and the DFCs, together with appropriate representatives from the Ministries of Finance and of Commerce and Industry, will form a Coordinating Council which will periodically review the implementation of the project and report to the Bank annually commencing December 1983 regarding the extent and impact of coordination of SMIPC and the DFCs in the provision of technical assistance and credit. This understanding with the Government has been confirmed.

IV. THE PROPOSED BANK LOAN

A. Benefits and Risks

4.01 Expected Benefits. This project is expected to generate substantial economic and institution-building benefits. On the macroeconomic aspects, the major immediate benefits of the project will be quality and productivity improvements, improving export performance and increasing

import substitution by the machinery industries. As noted in para. 1.10, rapid growth of the machinery industries is central to the growth and export objectives of the Fifth Five-Year Plan.

4.02 On the enterprise level, it is anticipated that about 660 individual enterprises would be assisted by SMIPC in 1983-86. In addition, about 3,300 managers, engineers, and supervisors would be trained in SMIPC's PROTIP activities in manufacturing processes and management techniques (para. 3.06). Moreover an additional 100-150 subprojects, some of which would also be recipients of technical assistance, would receive financial assistance from the participating financial institutions to increase economically and financially sound investments in the machinery sector. It is expected that SMIPC's PROTIP activities would result in substantial cost savings and improvements in productivity of the clients it assists. It is also expected that the subprojects would be substantially better prepared with SMIPC's PROTIP assistance during appraisal, and that the DFCs' portfolios of machinery projects would improve due to SMIPC's supervision of technical matters. A limited sample of the DFCs' machinery subprojects showed that the FRRs ranged from 19% to 55%, with an average of 25%, whereas the ERRs ranged from 14% to 65%, with an average of 33%. With the coordination that will be effected in the provision of financial and technical assistance (para. 3.30), the financial and economic returns of subprojects to be financed under the proposed project are expected to be very high. In addition, a number of subprojects, currently not having access to financial resources because of the lack of technical expertise within the financial institutions, would gain access to necessary financing.

4.03 Aside from the direct benefits mentioned above, the proposed project is expected to generate a number of external economies, since improvements in the productivity and product quality of the machinery industries would directly benefit other industries in the same subsector and, perhaps more importantly, would improve conditions of supply to other major sectors (para. 1.09). For example, improvements in foundry castings or components for vehicles in which they are incorporated. The lack of reliable matching of parts supplied by different subcontractors and the need to refinish or further machine the parts so that they will work in a complex system have been major sources of poor performance and increased costs of end-items. It is the strength of the "linkages," both backward (and horizontally) to suppliers of parts and components, and forward to buyers in other sectors, that generate the externalities that are inherent in this project. These cannot be quantified at this time, but as the benefits accrue, the evidence of the effects on suppliers and consumers can be organized. This will be done as part of SMIPC's task (para. 3.05), in order to evaluate the total effect of the project, and by Bank supervision missions. A priori, the qualitative evidence on the benefits to other sectors and the economy from the externalities that will result from this project is extensive.

4.04 Finally, it is expected that one of the major benefits of the project would be the build-up of SMIPC as an institution capable of comprehensive extension services and training to small and medium industries, and in particular, of providing production technology-type technical assistance

and for promoting the development of appropriate technology in Korea. Moreover, with the strategy of on-the-job training that would be fostered by the project, it is anticipated that improved technologies would be more rapidly disseminated to, and absorbed at, the plant level than heretofore (para. 2.04). With the expected success of this project, a group of production technology consultants would be developed domestically to carry on the functions which must now be performed by expatriate consultants (para. 3.04).

4.05 Risks. The risks in this project are two-fold: (a) institutional risks; and (b) disbursement risks. With respect to institutional factors, the major risk is that SMIPC's PROTIP activities would not prove effective for the provision of technical assistance to the machinery industries in Korea and/or would not be able to coordinate its technical assistance and training activities with the provision of credit. Such a development would, however, be unlikely since SMIPC has already appointed a capable Director in charge of Extension Services Departments I and II (para. 3.10), and would have seriously embarked on a program to improve its institutional strength prior to and during project implementation by: (a) increasing the number of private sector representatives on its Board (para. 3.08); (b) appointing a consultancy firm to assist it in managing foreign consultants and developing training curricula (para. 3.04); (c) formulating a comprehensive staffing plan and training program for its staff (para. 3.12); (d) reviewing its compensation schemes periodically to ensure that they are adequate to attract and retain high quality staff (para. 3.13); and (e) cooperating in the arrangements to promote coordination with the participating DFCs (para. 3.30). The recent Government financial measures to stimulate investment has created some divergence between domestic and foreign interest rates, which may lead to a greater demand for domestically produced equipment, and depending on substitutability of foreign and domestic machinery and equipment, the rate of disbursements of the credit component, which is primarily for direct and indirect foreign expenditures of machinery and equipment, may be adversely affected by these measures. However, these disbursement risks are mitigated by the fact that the Government has instituted rules which require that only foreign exchange loans can be used to finance importation of foreign equipment and the demand of the machinery industry for imported machinery is likely to far exceed the credit financing provided for under the proposed loan. Moreover, the differential in domestic and foreign interest rates is expected to be temporary. The Bank is continuing its review of the recent financial measures in the context of overall dialogue in conjunction with the proposed financial sector loan (paras. 1.06 and 1.31). On balance, the benefits of the project are likely to be substantial and the risks involved manageable.

B. Features of the Proposed Loan

4.06 Relending Arrangements. As described earlier, the proposed Bank loan would be made to the Government of Korea as Borrower. The Government would relend the proceeds of the loan to SMIPC and the three DFCs on the

same terms as the Bank loan under terms of subsidiary loan agreements satisfactory to the Bank (para. 2.08). SMIPC would be allocated US\$11 million for the technical assistance and training components, and the US\$59 million credit component would be allocated as follows: US\$29 million to SMIB; US\$20 million to KLB; and US\$10 million to CNB. SMIPC would bear the foreign exchange and variable interest risks of the technical assistance and training components, while the subborrowers of the DFCs would bear the foreign exchange and variable interest risks for the credit component.

4.07 Amortization Schedule. The technical assistance component of the proposed loan would have a fixed amortization schedule and would be repaid by SMIPC over a 14-year period including 3 years grace. The credit component would have an adjustable composite amortization schedule reflecting the aggregate amortization schedules of the subloans made by the DFCs. Individual subloans would have a maximum maturity of 12 years, including a reasonable grace period.

4.08 Relending Rate. For the credit component, the participating DFCs intend to lend the proceeds of the proposed loan at a variable interest rate of 2% above its own effective borrowing cost including the cost associated with the front-end fee. This is in line with the Ministry of Finance (MOF) guidelines and the general practice of the DFCs in Korea of relending the proceeds of foreign exchange borrowings from international sources. Based on the Bank's current lending rate of 11.43% p.a. a front end fee of 1.5%, and the 2% spread, the nominal onlending rate to subborrowers would be around 13.6% p.a. In addition, subborrowers would be charged a commitment fee of 0.75 of 1% p.a. on the undisbursed portion of the subloan committed to them. The 2% interest spread is adequate to cover the cost incurred by the DFC in processing subloan applications and supervising subprojects.

4.09 The effective cost of Bank funds, together with effective foreign exchange and variable interest risks, are expected to be positive in real terms, compared with projected international inflation rates and competitive with Korea's other sources of foreign borrowing. However, Bank interest rates are higher than domestic interest rates, which have been lowered to 10% as of end June 1982. These domestic interest rates are nevertheless positive as compared with the actual domestic inflation rates to date for 1982, which is expected to be about 7% during all of 1982, and with projected domestic inflation rates of 7%-8% during 1983-1985. The Government has furthermore indicated that it would keep interest rates under review, in order to maintain them at positive levels, and that it expects the differentials between domestic and foreign interest rate levels to be temporary.

4.10 Eligibility Criteria. The proposed loan is aimed at increasing productivity and efficiency of the machinery industries. For purposes of the proposed loan, machinery industries are those manufacturing activities which

fall under the International Standard Industrial Classification Category 38, i.e., the "manufacture of fabricated metal products, machinery and equipment." /1 Small and medium industries would be defined in terms of maximum size of employment. The official definition of 300 employees would be retained except for activities designated by the Government under the Small and Medium Industry Promotion Law for which the limit has been raised to 500 employees (i.e., automobile and bicycle parts, electronics, screws, hand tools and implements, etc.), and will be applicable to the clients serviced by SMIPC. For CNB, the maximum size of employees of its subborrowers will be 100; for SMIB and KLB, the maximum size of employees of their subborrowers will be 300, except for those specific activities mentioned above.

4.11 Subloan Ceilings. Under the credit component, subloan ceilings for the three DFCs would be: US\$2 million for SMIB and KLB and US\$500,000 for CNB. Except for KLB, these subloan ceilings are the same for SMIB and CNB under other Bank loans to these institutions. Because of the target enterprises under the project are small and medium machinery industries, KLB has agreed to lower the subloan limit from US\$10 million under previous loans to US\$2 million for this project.

4.12 Free Limit. Because this is the Bank's first such project in Korea, the Bank has requested the DFCs, and each of them has agreed, to submit the first 5 subprojects for review by the Bank. Thereafter, the free limits for the DFCs would be: US\$500,000 for SMIB and US\$300,000 for CNB. The Bank does not expect to review any additional subprojects of KLB. However, all subprojects are subject to post-disbursement review. With these provisions, it is expected that the Bank would review about 20 subprojects (accounting for approximately 15% of the total amount of the credit component and 15% of the number of subprojects) prior to approval.

4.13 Calculation of Economic Rates of Return. Under the credit component, economic rates of return would be calculated by the DFCs on the following basis: KLB, all subprojects above US\$1 million; SMIB and CNB, all subprojects above the free limit.

C. Procurement and Disbursement

4.14 Procurement. In the case of the proceeds of the Bank loan to be channeled through SMIPC, agreement was reached during negotiations with the Government and SMIPC that all consultants would be engaged in accordance with Bank guidelines, and in addition, all consultancy contracts above US\$100,000 would have consultants, TORs, and terms and conditions subject to the Bank's prior approval. Consultant contracts below US\$100,000 would be subject to post-approval review; standard TOR forms for routine jobs have been prepared

/1 New York: United Nations, Indexes to the International Standard Industrial Classification of All Economic Activities, (ST/STAT/M.4/Rev. 2/Add. 1, 1971).

and were agreed to during negotiations while TORs for repeater contracts where changes are minimal would be exempt from prior approval. With these thresholds, the Bank expects to review prior to approval about 20% of the consultancy contracts. With respect to materials and equipment procurement, expected to total about US\$1.75 million, Government procurement procedures, which provide for a substantial element of competition through strict competitive bidding practices which require bids from at least three potential suppliers, would be followed. These procedures are acceptable to the Bank. The machinery and equipment contracts are expected to be numerous and small, and international competitive bidding would not be appropriate. In the case of the credit component to be implemented by SMIB, KLB, and CNB, the procurement procedures would follow those of each of DFC. These procedures, which are based on strict competitive bidding practices that require at least three bids from potential suppliers, have been examined and found to be satisfactory under previous Bank loans (paras. 2.06, 3.22, 3.25 and 3.28). These procedures conform to the Government's guidelines, which emphasize competitive bidding, and to the special requirements of small and medium enterprises.

4.15 Disbursement. Disbursements under the proposed Bank loan would be for two purposes: (a) technical assistance and training; and (b) credit. The technical assistance and training component would be disbursed against: (a) 100% of the total costs of consultancy services retained by SMIPC; (b) 100% of overseas training for both SMIPC staff and for small and medium machinery enterprise management and staff; (c) 100% of foreign expenditures of directly imported equipment and materials; and (d) 60% of the local expenditures for imported goods purchased off-the-shelf or locally manufactured equipment and materials. The credit component would be used, as in previous Bank loans to the three DFCs, to finance: (a) 100% of the foreign exchange costs of goods and services directly imported by their subborrowers; and (b) 60% of the cost in domestic currency (representing the estimated foreign exchange cost) of locally manufactured or procured machinery and equipment. The proposed Bank loan is expected to be fully committed in three years and fully disbursed by mid-1986 (closing date December 31, 1986). The estimated quarterly disbursements are given in Annex 8. The standard Industrial Development and Finance (IDF) disbursement profile is not relevant for the portion to be allocated to SMIPC, whereas the disbursements under the credit component is expected to be completed well within the disbursement profile for the IDF sector in the region, which is complete disbursements within four years, because of the efficiency of the participating DFCs and because the demand for investment funds by machinery enterprises substantially exceed the amount of the credit available under the loan. The disbursement profile for this project is based on the projections provided by SMIPC and the three DFCs, and is realistic.

D. Agreements Reached and Recommendation

4.16 Agreements Reached. During negotiations, the following agreements were reached or confirmed:

(a) Condition of Loan Effectiveness:

- (i) signing of subsidiary loan agreements between the Government and SMIPC, SMIB, KLB, and CNB, on terms and conditions satisfactory to the Bank (para. 2.08).

(b) With the Government regarding:

- (i) loan channeling arrangements and treatment of foreign exchange and variable interest risks (para. 4.06); and front-end fee (para. 4.08);
- (ii) Government support for SMIPC (para. 3.17); and
- (iii) formation of a coordinating council (para. 3.30).

(c) With SMIPC regarding:

- (i) appointment of a consultancy firm to SMIPC satisfactory to the Bank, on terms and conditions satisfactory to the Bank by March 31, 1983 (para. 3.04);
- (ii) assignment of staff to coordinate technical assistance and training by March 31, 1983 (para. 3.06);
- (iii) formulation of its monitoring system (para. 3.06);
- (iv) maintenance and increasing private sector representation in its operations (para. 3.08);
- (v) reorganization of SMIPC's Extension Service Departments I and II in a manner satisfactory to the Bank by March 31, 1983 (para. 3.11);
- (vi) staffing plans and training programs for SMIPC staff (para. 3.12);
- (vii) its intention to maintain a competitive salary and staff benefit structure (para. 3.13);
- (viii) its cost recovery formulae for PROTIP extension services, (para. 3.15);
- (ix) its intention to maintain a separate account for the project and provide audit reports of the project account and SMIPC's accounts (para. 3.20); and
- (x) its procurement procedures (para. 4.14).

(d) With each of SMIB, KLB, and CNB regarding:

- (i) eligibility criteria for subloans (para. 4.10);
- (ii) ceiling of individual subloans (para. 4.11); and
- (iii) free limits of individual subloans and each of the DFCs would submit the first five subprojects for Bank review (para. 4.12), and calculation of ERRs (para. 4.13).

4.17 Recommendation. A Bank loan of US\$70 million with a maturity of 14 years, including a grace period of 3 years, is recommended.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and The Manufacturing Sector

Structural Changes in the Manufacturing Sector, 1972 to 1980 /1

	1972	1976	1980	1972-80 average annual growth rate, (in constant 1975 prices) (%)
Gross output (billion won)				
Manufacturing sector (a)	2,441.6	11,677.2	36,279.1	18.6
Machinery industries /2(b)	178.9	2,158.7	6,960.8	36.9
(b/a) (%)	11.8	18.5	19.2	
Value added (billion won)				
Manufacturing sector (c)	899.4	4,075.1	11,856.6	17.8
Machinery industries /2(d)	115.0	809.3	2,587.7	35.7
(d/c) (%)	12.8	19.9	21.8	
Exports (US\$ million)				
Total (e)	1,807.0	8,114.9	17,504.9	20.9
Manufacturing sector (f)	1,584.3	7,283.2	16,150.8	22.7
Machinery industries (g)	171.6	1,280.4	3,450.7	48.0
(f/e) (%)	87.7	89.8	92.3	
(g/f) (%)	10.8	17.6	21.4	

/1 All values expressed in current prices.

/2 Includes all activities classified to Korean Standard Industrial Classification (KSIC) Code 38- "Manufacture of fabricated metal products, machinery and equipment."

Source: EPB.

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September 7, 1982

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Structure of the Machinery Industries, /a 1980
(Current prices)

	General machinery	Electrical machinery	Transport equipment	Precision machinery	All machinery
Gross output (billion won)	913	2,720	2,048	315	5,996
Share (%)	15	45	34	5	100
Exports (US\$ million)	391	2,015	1,154	264	3,824
Share (%)	10	53	30	7	100
Annual growth in gross output /b					
1972-80 (%)	34	39	37	40	38
1975-80 (%)	26	33	32	33	32
Annual growth in exports /b					
1972-80 (%)	37	42	74	55	47
1975-80 (%)	32	25	37	25	29

/a Covers those industries classified to KSIC Code 38, excluding fabricated metal products (KSIC=381).

/b In constant (1975) prices.

Source: EPB.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Size Structure of the Machinery Industries, /a 1980

	Enterprises (no.)	Employees ('000)	Gross output (billion won)	Value added
<u>Machinery Industries</u>				
Small and medium /b	4,250	171	1,428	614
Large	250	274	4,568	1,588
<u>Total</u>	<u>4,500</u>	<u>445</u>	<u>5,996</u>	<u>2,202</u>
<u>Share of Small and Medium Enterprises</u>	----- (%) -----			
General machinery	97.9	62.8	50.1	49.6
Electrical machinery	90.1	32.7	20.4	23.1
Transport equipment	95.3	28.1	13.7	18.6
Precision machinery	94.4	53.2	43.1	45.4
All machinery	94.4	38.4	23.8	27.9
Manufacturing	96.6	49.6	31.9	35.2

/a Covers those industries classified to KSIC Code 38, excluding fabricated metal products (KSIC 381).

/b Enterprises with less than 300 employees.

Source: Report on Mining and Manufacturing Survey, 1980, EPB.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Production Indexes for Machinery Industries /a

Industry	1975	1977	1978	1979	1980	1981	1982 (May)/b
General machinery	100.0	166.4	253.9	254.4	190.6	218.6	232.5
Electrical machinery	100.0	219.1	304.2	360.3	307.3	349.2	368.1
Transport equipment	100.0	149.5	222.8	257.1	201.3	263.3	298.9
Precision machinery	100.0	213.3	274.1	291.9	298.7	297.7	268.4
Manufacturing	100.0	158.7	196.4	220.1	215.9	238.8	240.7

/a Annual figures based on averages of monthly indexes.

/b Average of seasonally adjusted monthly figures for January to May 1982.

Source: Monthly Economic Statistics, EPB.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Capacity Utilization Ratios by Industry (%)

Industry	1977	1978	1979	1980	1981/a (Jan-Oct)
General machinery	66.8	68.8	74.9	45.6	46.9
Electrical machinery	71.8	71.1	74.9	58.6	59.6
Transport equipment	37.6	45.0	43.1	46.2	63.3
Total manufacturing	81.5	88.1	81.9	73.2	74.6

/a Monthly average for period January to October 1981.

Source: Mission estimates.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

SMIs Operating At Normal Operating Ratios /a
(%)

	1978	1979	1980	^{/b} 1981
<u>Mining and Quarrying</u>	<u>72.2</u>	<u>71.5</u>	<u>74.6</u>	<u>75.3</u>
<u>Manufacturing</u>	<u>82.0</u>	<u>76.2</u>	<u>70.1</u>	<u>76.8</u>
Food and beverage	85.5	76.5	78.8	82.4
Textile, wearing apparel and leather	86.9	70.7	65.7	70.9
Wood and wood products	67.6	70.8	73.1	71.8
Paper and paper products	89.1	92.1	87.5	76.8
Chemicals, petroleum, coal, rubber and plastic products	74.5	68.9	81.6	80.3
Nonmetallic mineral products	51.5	61.0	41.9	57.9
Basic metals	97.2	67.8	76.4	77.2
Metal products, machinery and equipment	95.3	93.8	73.9	91.6
Other	95.3	77.9	84.1	84.1
<u>Overall</u>	<u>81.8</u>	<u>76.1</u>	<u>70.2</u>	<u>76.8</u>

/a "Normal" implies 80% capacity utilization or more.

/b During October 1981.

Source: Korea Federation of Small Business

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Export Projections: 1981 to 1986
(Billion US dollars, current prices)

Industry	<u>1980</u>		<u>1981</u>		<u>1986</u>		<u>1982-86</u>
	Value	Share (%)	Value	Share (%)	Value	Share (%)	Annual growth rate (in real terms) (%)
Machinery	3.5	19.8	4.4	20.9	17.3	32.6	21.8
General machinery	0.4	2.1	0.4	1.7	2.2	4.1	32.9
Electrical machinery	1.9	11.0	2.2	10.6	6.9	13.0	16.0
Transport equipment	1.2	6.6	1.8	8.6	8.2	15.4	25.3
Total exports	17.5	100.0	21.0	100.0	53.0	100.0	11.4

Source: A Summary Draft of the Fifth Five-Year Economic and Social Development Plan: 1982-86, EPB, September 1981.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Imports of Machinery by Major Developed Countries
(US\$ million, %)

Year	US		Japan		Germany/a	
	Total machinery imports	LDC share	Total machinery imports	LDC share	Total machinery imports	LDC share
	(US\$ mil)	(%)	(US\$ mil)	(%)	(US\$ mil)	(%)
1970	11,171	5.0	2,132 /b	1.9 /b	6,700	1.0
1975	24,257	10.8	3,824	10.2	13,046	3.0
1979	56,560	14.5	7,038	16.4	30,797	2.8

/a Federal Republic of Germany.

/b Japan data relate to 1971.

Source: U.N. Commodity Trade Statistics, 1970 and 1971, 1975 and 1979
Statistical Papers Series D; Vol. XX, Nos. 1-15, 1-20, Vol. XXI,
No. 1-10, Vol. XXV, Nos. 1-4, 1-14 and 9-3, Vol. XXIX, Nos. 1-4,
1-5 and 1-19.

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September 7, 1982

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Growth in Domestic Demand and Domestic Shares For
Machinery Industries /a

Industry	<u>Domestic demand /b</u>			<u>Domestic share</u>	
	1975 (Billion won)	1980 (Billion won)	Average annual growth (in constant 1975 prices) (%)	1975	1980
				(%)	(%)
Machinery	1,671	6,784	23.7	41.3	54.1
General machinery	545	2,157	21.7	24.5	31.3
Electrical machinery	526	2,402	28.1	48.8	62.3
Transport equipment	546	1,986	21.0	51.4	67.8
Precision machinery	55	239	22.2	35.7	64.6

/a Covers those industries classified to KSIC Code 38, excluding fabricated metal products (KSIC 381).

/b Domestic output - Exports + Imports.

Source: EPB.

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September 7, 1982

KOREA

STAFF APPRAISAL REPORT

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Letter of Development Policy for the Machinery Industries



MINISTRY OF COMMERCE AND INDUSTRY
UNIFIED GOVERNMENT BUILDING • SEOUL

September 24, 1982

Mr. A. W. Clausen
President
International Bank for
Reconstruction & Development
1818 H. Street, N.W.
Washington, D.C. 20433

Dear Mr. Clausen:

We would like to take this opportunity to let you know how grateful we are for your invaluable contribution to the promotion of the Small and Medium Scale Machinery project, which has been developed by both the World Bank and the Republic of Korea.

The purpose of this letter is in regard to the loan request for the above-mentioned project in Korea, and we have pleasure in enclosing herewith the Letter of Development Policy for the Machinery Industries which, we trust, you will find satisfactory. It includes what we think are the most important factors, such as technical assistance and development policy, protection policy, export promotion and import restrictions and subcontracting, all with particular reference to furthering successful progress in the Korean Machinery Industries and the economy in general.

We believe that with your cooperation and assistance, remarkable results can be achieved from this loan project, and we shall make every effort to work with you in every step of its progress.

Should you need further information, or if you have any advice or comments on this subject, please do not hesitate to contact us.

With best regards,

Sincerely yours,

Kim Dong-Whie
Minister

Encl.

LETTER OF DEVELOPMENT POLICY FOR THE MACHINERY INDUSTRIES

This letter is to request a loan in support of the development of machinery industries in Korea.

Background

Since the mid-1970's, our country's industrial sector has entered a period of substantial structural change. In the earlier period of rapid industrial expansion (which commenced in the early 1960s), principal emphasis was placed on export-oriented development of light industries, such as textiles, clothing and wood products. In recent years, however, these industries have begun to face stiffer competition in world markets, arising from factors such as rapid export expansion by other newly-industrializing nations, more restrictive import policies of the industrialized nations and rapidly increasing wage rates in Korea.

During the Third and Fourth Five-Year Plan period (1972-81), increased emphasis was placed on the process of strengthening and diversifying the industrial base. The first steps in this process involved an emphasis on machinery and electronics industries. Between 1972 and 1980, the share of manufacturing value added contributed by the machinery sub-sector (including electronics) increased from 13% to 22%, and the share of machinery exports in total exports increased from 11% to 20%.

This remarkable growth, which has faltered during the recent recessionary period, must be continued into the future if Korea is to

maintain a rapid rate of economic expansion. Our country can no longer rely on labor-intensive traditional exports to supply the momentum of rapid growth. Emphasis must increasingly be placed on skill and technology-intensive activities. Accordingly, the machinery industries will remain one of the keystones of Korea's development prospects over the Fifth Plan period and beyond.

A primary objective for future development of the machinery industries is to achieve a more balanced structure between the large end-item producers and the small and medium producers of parts and components. To this end, attention will be concentrated on balancing out existing capacity of heavy machinery producers and improving operating ratios. New, large-scale projects will be initiated only after the completion of detailed feasibility studies. Increased emphasis will be placed on promotion of specialized small and medium machinery producers, and on the design and implementation of programs for improving productivity and quality. This will be achieved through technical assistance, improved absorption of foreign technology, increased research and development activity and improved technical manpower training.

Expected Contribution of the Machinery Industries to Economic Development During the Fifth Plan Period (1982-86)

Over the Fifth Plan period, value added originating in the machinery industries is projected to grow at an average annual rate of 17.6% compared with projected GNP growth of 7.6% p.a. (in 1980 prices), increasing the share of these industries in total GNP from 16.7% in 1980 to 22.9% in

1986. On this basis, the machinery industries would contribute approximately one percentage point per annum to the growth rate of GNP. Machinery exports (expressed in current US dollars) are projected to grow at over 30% p.a. over this period, compared with growth in total exports of around 20% p.a., a contribution of more than six percentage points to the annual growth rate of total exports.

Policies for the Promotion of Machinery Industry Development

In order to support the ambitious plans for machinery industry development, the Government has already taken, or is planning to take, policy initiatives in a number of key areas including:

- (a) the provision of technical assistance and training;
- (b) incentives for technology upgrading and development;
- (c) protection policies;
- (d) export incentives; and
- (e) subcontracting policies.

(a) Technical Assistance and Training. The Government is committed to supporting the considerable efforts required to address the needs of small and medium machinery producers for technical assistance and training.

In January 1979, the Small and Medium Industry Promotion Corporation (SMIPC) was established as a comprehensive agency in Korea, to carry out various kinds of governmental policies for the development of small and medium-scale industries. Its major activities are as follows:

- (i) support for modernization projects;
- (ii) support for cooperation projects;
- (iii) extension services;
- (iv) training services; and
- (v) information services.

From its establishment until 1981, SMPIC has undertaken technical assistance projects for 444 enterprises in the machinery and metals industries, 567 in other fields and management extension services for 589 enterprises. Most of the services have been carried out by domestic consultants.

Early this year, the Government decided to merge the Korea Production Technology Corporation (KOPTEC) with SMIPC, so that SMIPC will be further strengthened in its technical assistance function, especially with regard to productivity on the shop floor. Such an arrangement is planned to maximize the efficiency of manpower and budget through the coordination of both organizations, and devised to have a unification of technical assistance projects in Korea. After merging, SMIPC will

intensify more effective extension services through the utilization of first-class foreign experts on the shop floor, which have been previously conducted by KOPTEC.

Therefore, the Government expects that SMIPC will play an important role for the development of small and medium enterprises as a core agency providing technical assistance and training.

Although SMIPC does not charge for any extension services at present, SMIPC will charge, in the case of delivering extension services by foreign experts, from the year 1983. The cost recovery ratio will be decided according to formulae agreed by SMIPC with the World Bank and based on the interest and need for these services by machinery enterprises. Also considered will be the situation of the structural improvement of small and medium enterprises, in order to set up the annual cost recovery ratio simultaneously.

The Government intends to recover 10% of direct costs in 1983, and will raise its charge to 80% of full direct costs within ten years. SMIPC will cover its operating expenses through the operating income of the Small and Medium Industry Promotion Fund.

On the basis of a review of the industrial extension services system in Korea completed in December, 1981, the Government has initiated an action program to further improve the efficiency of the system after consultation with the World Bank. The action program has established

performance targets of assistance services, and has outlined a phased cost recovery program for the services of SMIPC.

During 1982, the first phase of the Training Institute of SMIPC at Banwohl will be completed. Training courses for entrepreneurs and for extension services officers will commence in October, covering management and organizational matters. Technical training, for which a workshop complex at Banwohl is being built and equipped, is planned to start in early 1984.

(b) Technology Development. Policy initiatives directed to supporting technological upgrading and advancement of machinery and other technology-intensive industries include measures to promote the acquisition of foreign technology (through foreign direct investment (FDI) and the import of technology under license), and encouragement of local research, development and engineering.

Restrictions on FDI have been relaxed considerably. As of July 1981, half of Korea's industries have been opened up to foreign investors. For the machinery industries, this ratio is in excess of 90%. Further liberalization of FDI restrictions is planned for the Fifth Plan period, and steps are being taken to improve the administrative environment faced by foreign investors in Korea.

The procedures for importing technology under license have been liberalized substantially over the last three years. As of January, 1982,

all controls and restrictions (except those relating to strategic areas, such as nuclear technology) have been removed. These measures will make it easier and less costly for Korean products to gain access to overseas technology through licensing arrangements.

Under the Technology Promotion Law, various incentives are made available to promote the development and upgrading of industry's technological capability.

These include tax exemptions for profits set aside in technology development reserves; reduced tariffs on the import of R&D equipment; deduction of annual non-capital RD&E expenditures from taxable income; accelerated depreciation on industrial RD&E facilities; and tax credits for investment in facilities in RD&E work, or for commercialization of locally-developed R&D results. In order to promote the use of domestically-produced capital equipment, a higher tax credit is available for locally-produced equipment (10% vis-a-vis 8% for imported equipment). From 1982, a special tax credit equivalent to 10% of all RD&E expenditure by industry is being implemented.

The Government has established the Korea Institute of Electronics Technology (KIET) to provide RD&E and other services to the electronics industry. KIET has the facilities and capabilities to provide services across the full spectrum of the product cycle, from research and development to production. Also, steps have been taken to improve the supply of financial resources for RD&E through the establishment of the Korea Technology

Development Corporation (KTDC), a private sector organization which will provide conventional loans, conditional loans (in which KTDC will share the risks and profits with project sponsors) and equity investments for Korean RD&E projects. KTDC has earmarked 30% of its credit lending to small and medium industries. Both KIET and KTDC have been supported by World Bank loans.

(c) Protection Policies. Protection policies have constituted a key element of the assistance strategy for development of the machinery industries. Principal reliance has been placed on restriction of imports where similar, locally-produced items are available. However, while the Government considers it necessary to provide protection against import competition during the early development phase of these industries, this protection must be limited in extent and duration if Korean machinery industries are to develop into internationally-competitive, export-oriented industries, able to make a major contribution to Korea's economic growth. The proportion of machinery items subject to import restriction has already been reduced since 1977 from 65% to less than 50%. This ratio, however, is still considerably higher than the average of less than 25% for all other industries.

Accordingly, a priority task in the review of industrial incentives and protection policies, currently in progress as part of the Structural Adjustment Loan (SAL) agreements with the World Bank, will be a detailed review of protection for the machinery industries. Detailed terms of reference for this review have been agreed with the World Bank.

The final report will be submitted to the World Bank for review by June 1983. A detailed action program for further rationalizing tariffs and establishing a set of priorities for repealing import restrictions (including a program for converting import restrictions to tariff protection) for the machinery industries will be submitted to the World Bank following the final report.

(d) Export Incentives. Exports of machinery products are typically financed through medium and long-term suppliers' credits. The Government has already greatly expanded the role of the Korea Export Import (EXIM) Bank in this area, and further substantial increases are planned for the Fifth Plan period. Increased efforts will be made to encourage commercial banks' co-financing of these export credits.

The Government's overall commitment to promoting export competitiveness of Korean industry will also have important ramifications for machinery exports. A principal objective for the Fifth Plan period is to reduce domestic inflation rates with a view to promoting the cost competitiveness of Korean products in international markets. The Government will also continue with its program of improving export procedures by simplifying rules and regulations.

(e) Subcontracting Policies. A key element of the Government's development policy for the machinery industries is the promotion of stronger links between suppliers of parts and components and assemblers. Without the supply of these parts and components on an efficient and competitive basis at acceptable quality levels, the large assemblers cannot perform effectively.

At present, subcontracting arrangements in the machinery industries in Korea have been developed to a very limited extent only, compared with some developed countries at a similar stage of industrial development. The major reason for this is the lack of development of small and medium machinery producers. This has been due to factors such as their limited access to financial resources because of the priority given to heavy and chemical industry development during the 1970's, and the absence of suitable programs providing technical assistance to small and medium machinery producers. At the same time, large assemblers of machinery and equipment have installed facilities to produce a wide range of parts and components in-house, in preference to developing subcontracting sources.

The Government's strategy to overcome these problems is concentrated on providing support in those product areas where it is considered that subcontracting could be developed most efficiently. Assistance has been provided to small and medium subcontractors through increased access to financial resources through the Small and Medium Industry Bank (SMIB) and the Korea Credit Guarantee Fund (KCGF); improved access to technical assistance and training through SMIPC; and assistance through Ministry of Commerce and Industry (MCI) in negotiating and monitoring contract arrangements with large companies. Also, efforts have been made to persuade large companies to consign to subcontractors production of selected parts and components produced in-house.

The number of items designated as subcontracting items (production of which may thus be eligible for the foregoing assistance) has been rapidly expanded over the last two years. As of end-1980, there were 70 designated subcontract items while at end-1981 this had increased to 800 items (approximately 600 of which are machinery items). The Government plans to continue expanding the range of designated contract items. However, over the longer terms, as the existing imbalances between small and large machinery producers are overcome, it plans progressively to reduce its direct involvement in designation of subcontract items and enterprises, and to increase the role of competitive market forces in the development of subcontracting arrangements. In this context, it plans to initiate a critical review of current subcontracting policies and procedures in the context of its overall review of industrial incentives and protection policies. The review will assess the impact of these arrangements on small and medium producers and large assemblers, and will assess alternative incentive policies directed to encouraging large assemblers to make greater use of subcontracting arrangements.

Emphasis will be placed on assessing the effects on factors, such as scale of operations, specialization, costs, quality aspects and delivery schedules of small and medium producers. The review would similarly assess the impact on large assemblers of consigning to subcontractors production of items previously produced in-house. Major difficulties still faced by subcontractors and users will be identified, and measures to address these problems will be formulated.

The review will also assess alternative incentive policies designed to encourage increased subcontracting by large assemblers, with a view to gradually replacing institutional intervention in the selection and support of subcontractors with more broadly-based incentives policies. Terms of reference have been agreed with the World Bank, and the final report will be submitted to the Bank for discussion by June 1983.

These policy initiatives already taken, or planned, with respect to machinery industries, together with the industrial and financial policy proposals outlined in the Fifth Five Year Economic and Social Development Plan, will contribute to fostering an environment in which the development of machinery industries can proceed on an efficient and internationally-competitive basis. The Government is committed to providing support for these industries, which (as previously noted) comprise a keystone of our country's development over the Fifth Plan period and beyond, in a way which will assist them to realize their domestic and export potential without excessive or prolonged import protection, fiscal or financial assistance.

We will continue to monitor closely the evolving conditions facing these industries in both domestic and international markets, and will continue our consultation with you with respect to the measures adopted in support of these industries.

KOREASMALL AND MEDIUM MACHINERY INDUSTRY PROJECTMachinery Industries and The Manufacturing SectorKey Aspects of Policy Developments Affecting Machinery Industries

Measures taken to December 1981	Measures planned for 1982	Expected impact on machinery industries	Projected contribution to economic development
<u>A. Financial Incentives and Export Promotion</u>			
1. Initial steps taken to reduce Government control and ownership of banking system and to open financial sector to greater foreign participation.	1. Continuation of program of reducing Government intervention in financial sector (including phased reduction of NIF lending) and increasing foreign participation. Continuing dialogue with World Bank in context of Bank's financial sector lending program.	1. Access to financial resources on basis more closely associated with industrial efficiency and market potential.	1. Economic development more closely related to Korea's comparative advantage.
2. Expansion of role of Exim Bank in providing medium- and long-term suppliers' credits for export of machinery and equipment.	2. Continued expansion of Exim Bank's funding of suppliers' credits. Increased efforts to secure commercial banks' cofinancing.	2. Improved access to export credit will facilitate expansion of machinery exports.	2. Improved export performance leading to economic growth, increased employment opportunities and stronger balance of payments situation.
<u>B. Technology Development Policies</u>			
1. Relaxation of FDI restrictions: greater range of industries open to FDI (50% of Korea's industries as of July 1981); minimum investment and local equity participation conditions relaxed.	1. Continued liberalization of industries open to FDI.	1. Improved access to foreign technology and expertise permitting acceleration of industries' development.	General upgrading of technology and skills with consequent improvements in international competitiveness of Korean industry.
2. Liberalization of procedures for importing technology under license.	2. Total removal of controls and restrictions (except for strategic areas such as nuclear technology and defence) on importing technology under license from early 1982.	2. Improved incentives for R&D and upgrading of technology resulting in accelerated development of machinery industries.	
3. Provision of expanded taxation and financial incentives for research and development (R&D) and technology upgrading.	3. Planned introduction in 1982 of additional tax rebate/exemption equivalent to 10% of total R&D expenditure.		
<u>C. Technical Assistance, Extension Services and Training</u>			
Provision of technical assistance, extension services and training through SMIPC, SMIB, and several other agencies	Reduction in number of agencies providing extension services to SMIs from 19 to 4 and improvement in coordination between these agencies. Further upgrading of quality of technical assistance, extension services and training.	Improved access to technical assistance, extension services and training through SMIPC.	Improved technical performance leading to improvements in international competitiveness of machinery industries and machinery users.
<u>D. Import Liberalization and Tariff Reform</u>			
Increase in import liberalization ratio for all import items from 53% in 1978 to 75% in 1981 and from 39% in 1978 to 51% in 1981 for machinery and equipment (based on 4-digit CCCN codes).	1. Continued import liberalization to levels comparable with developed countries by 1986. 2. Comprehensive review of import protection policies to be undertaken as part of SAL agreements. Priority to be given to review of machinery industries leading to action program for rationalization of protection structure for these industries.	Rationalization of industry structure with increased emphasis on production of items consistent with Korea's comparative advantage.	More efficient and lower cost supply of capital goods to Korean industries; higher growth rate of machinery industries and user industries; increased employment opportunities; and more efficient import substitution.
<u>E. Subcontracting Policies</u>			
Provision of financial incentives for specialized small and medium machinery producers entering into subcontracting arrangements with large assemblers.	1. Plans for introduction during 1982 of tax incentives for the transfer of machinery and equipment for production of parts and components equipment from large assemblers to small and medium subcontractors. 2. Review of subcontracting policies with emphasis on examination of alternative incentives measures in preference to direct institutional intervention in choice of subcontractors.	Closer working relationships between large assemblers and small and medium subcontractors with consequent improvements in quality control, reliability, etc. of parts and components.	Improved intra- and interindustry linkages; faster export growth and improved import substitution; increased employment opportunities; beneficial balance of payments effects.

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SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

SMIB's, KLB's and CNB's Projected Lending Operations
to the Machinery Sector for the Years 1983-85
(W million and \$ million)

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	<u>1983</u>			<u>1984</u>			<u>1985</u>		
	Domestic currency	Foreign currency	Total	Domestic currency	Foreign currency	Total	Domestic currency	Foreign currency	Total
<u>Small and Medium Industry Bank</u>									
Total Equipment Loans to SMI Sector	235,820	58,800	294,620	257,420	64,400	321,820	277,700	69,300	347,000
- of which for machinery sector	75,462	19,404	94,866	84,949	22,540	107,489	94,418	25,641	120,059
- as % of total equipment loans	32.0	33.0	32.2	33.0	35.0	33.4	34.0	37.0	34.6
<u>Korea Long-Term Credit Bank</u>									
Total Equipment Loans to SMI Sector	32,234	41,790	74,024	47,114	48,090	95,204	57,382	55,440	112,822
- of which for machinery sector	6,647	8,358	14,805	9,423	9,618	19,041	11,477	11,088	22,265
- as % of total equipment loans	20.6	17.4	20.0	20.0	20.0	20.0	20.0	20.0	20.0
<u>Citizens National Bank</u>									
Total Equipment Loans to SMI Sector	66,300	31,050	97,350	86,200	35,190	121,390	112,050	39,330	151,380
- of which for machinery sector	11,300	4,900	16,200	17,200	6,300	23,500	26,900	7,700	34,600
- as % of total equipment loans	17.0	15.8	16.6	20.0	17.9	19.4	24.0	19.6	22.9
<u>Totals</u>									
Equipment Loans to SMI Sector	334,354	131,640	465,994	390,734	147,680	538,414	447,132	164,070	611,202
Machinery Sector Loans	93,409	32,662	126,071	111,572	38,458	150,030	132,795	44,429	177,224
(US\$ equivalent)	(129.7)	(45.4)	(175.1)	(155.0)	(53.4)	(208.4)	(184.4)	(61.7)	(246.1)

AEPID
August 1982

KOREA

THE SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

THE SMALL AND MEDIUM INDUSTRY PROMOTION CORPORATION

POLICY STATEMENT

(Approved by the Board of Policy on November 12, 1982)

Objective

1. This Policy Statement sets forth the role of the Small and Medium Industry Promotion Corporation (SMIPC). SMIPC is the primary institution in Korea charged with promoting the efficient development of Small and Medium Industry (SMI) in Korea, and thus, with contributing to the balanced development of the national economy. SMIPC aims to achieve the above objectives by implementing modernization projects and/or projects with SMI cooperatives, and by providing comprehensive managerial and technical extension services and training to SMI.

Scope of SMIPC's Activities

2. The SMIPC shall carry out the following activities:
- (a) Implementation of modernization projects and projects for cooperatives;
 - (b) Managerial and technical extension services, and introduction and dissemination of technology, using domestic and foreign consultants;
 - (c) Training of management and employees of SMI, other institutions concerned with development of SMI in Korea, and domestic managerial and technical consultants;
 - (d) Operation and administration of the Small and Medium Industry Promotion Fund;
 - (e) Acquisition of land, buildings and facilities, establishment of industrial estates, and establishment, leasing, and transfer of common facilities and standard factory buildings for cooperative projects;
 - (f) Acceptance of securities and bonds issued by SMI;
 - (g) Activities incidental to those specified above; and

- (h) Other activities specifically entrusted by the Minister of the Ministry of Commerce and Industry MCI for promotion of SMI.

Identification of Clientele

3. Small and medium entrepreneurs shall be defined as those which satisfy the criteria as set forth in Article 2 of the Small and Medium Industry Basic Act, except for those industries engaged in such manufacturing industries or transportation services as provided in Attachment No. 1 of the Enforcement Decree of the Small and Medium Industry Promotion Act. Small and Medium cooperatives established in accordance with the Small and Medium Industry Cooperatives Act shall also be treated as small and medium entrepreneurs.

General Principles of Operation

4. SMIPC will adhere to the following general principles of operation:
- (a) SMIPC will provide comprehensive managerial and technical extension services, and training, to SMI;
 - (b) SMIPC will recruit first class domestic and foreign specialists who have wide experience and up-to-date knowledge to provide such services and training;
 - (c) SMIPC will require foreign specialists as part of their terms of contract to train their domestic counterparts in their areas of expertise;
 - (d) SMIPC will utilize domestic specialists from all specialized institutions within Korea, endeavoring not to duplicate facilities or available human resources of institutions within Korea;
 - (e) SMIPC aims to assist small and medium entrepreneurs or cooperatives in preparing investment proposals to financial institutions to carry out investment plans for expansion and acquisition or equipment;
 - (f) SMIPC will make recommendation to the Government for appropriate changes in the system of incentives affecting these industries, including tariffs, tax rates, and regulations, keeping in mind the main objective of promoting efficient and competitive development of SMI;
 - (g) SMIPC's service fees will initially be charged at nominal rates, but will be graduated so that eventually

the direct costs of providing such services will be fully recovered.

Cooperation with Other Institutions

5. In the case of managerial and technical extension services, and training, SMIPC will endeavor to form working relationships with other institutions, both in Korea and overseas, to provide such services. It is anticipated that SMIPC will be able to fulfill its role most effectively if it does not perform all the required tasks with in-house staff, and that by taking advantage of capabilities and facilities of other institutions, SMIPC will be able to maximize the impact of its own limited resources.

6. In the case where financial assistance to enterprises or cooperatives is identified as necessary to effect improvements in productivity and upgrade technology, SMIPC would be in a position to identify a large proportion of such proposals. The approval, and eventually, the shouldering of the credit risks for such investment proposals to small and medium enterprises and cooperatives, would be the responsibility of the financial institutions.

Management and Organization

7. SMIPC has been established as a public corporate foundation under the pertinent provisions of the Civil Law.

8. SMIPC is legally entitled to receive budgetary support from the Government in accordance with the Small and Medium Industry Promotion Law and is empowered to administer the Small and Medium Industry Promotion Fund.

9. To maximize its impact on its clients, SMIPC will follow general Government guidelines as formulated and announced by the Minister of Commerce and Industry in respect of its development objectives. Its policies will be determined by its Board of Policy. However, SMIPC's Board of Directors have been granted full autonomy in operational matters.

10. In order to get full support from both the public and private sectors, SMIPC's Board of Policy includes a representative mix of Government officials, representatives from priority industrial sectors, financial institutions, and representatives from universities. It is the intention that from time to time, the composition of the Board of Policy would be changed so that non-ex officio members would be representative of the industrial subsectors being given priority in SMIPC's plans and programs.

11. SMIPC's President/Chairman is appointed by the President of the Republic of Korea upon the request of the Minister of MCI; the Directors are appointed by the Minister of MCI upon the request of the President/Chairman of SMIPC. The Directors will each possess appropriate managerial (and preferably technical) qualifications so that they will have the

confidence and respect of small and medium entrepreneurs and the staff of SMIPC.

12. In order to recruit and retain quality staff, SMIPC will set the compensation of its staff at a level that will be competitive with both private and public sector organizations in Korea, and will continually review its compensation policies to ensure their continued competitiveness.

Performance Audit

13. To assess its own effectiveness in the performance of its own functions, SMIPC maintains a monitoring system to evaluate the impact of its extension officers and training experts, and issues periodic progress reports on its modernization projects, cooperatives projects, extension service and training activities to evaluate the impact of its operations on the output, productivity, and technological improvement of its clients.

Financial Audit

14. SMIPC will carry out its financial practices with due consideration to prudence and financial responsibility.

15. SMIPC will maintain accounting records to reflect its operations and affairs in accordance with generally accepted accounting principles and standards, and will submit financial statements to the Minister of MCI not less than three months after the close of each fiscal year.

16. An audit of SMIPC's accounts and financial statements by an independent auditor outside of SMIPC will be conducted annually.

KOREA

THE SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

THE SMALL AND MEDIUM INDUSTRY PROMOTION CORPORATION

Strategy Statement for Production Technology

Improvement of the Machinery Industries, 1983-86

(Approved by the Board of Policy on November 12, 1982)

Introduction

1. Among its many activities to promote the development of Small and Medium Industries (SMI) in Korea, the Small and Medium Industry Promotion Corporation (SMIPC) has been charged with improving the production technology capabilities of Korea's small and medium machinery industries. In accordance with Government policy, as indicated in the Fifth Five-Year Socio-Economic Development Plan, the machinery industries are expected to be the source of much of the growth in output and exports targeted during the Plan period, and indeed, for the rest of the 1980's.

2. Recognizing that Korean machinery industries must be substantially improved if the targets are to be achieved, and given that market considerations for machinery industries are much different from those of Korea's traditional exports, SMIPC has targeted the machinery industries as one of the priority industries for the improvement of production technology of Korean industries. For this purpose an Extension Service Programming Department II has been established within SMIPC. This department is charged with implementing the production technology program (PROTIP) initially designed primarily for the machinery industries.

3. SMIPC intends to achieve its task of improving production technology of machinery industries through a comprehensive program of managerial and technical extension services, training, and technical information, using both domestic and foreign specialists.

Small and Medium Machinery Industries

4. SMIPC will concentrate its activities on small and medium machinery industries. Though large-scale machinery industries also need assistance in improving their productivity and efficiency, SMIPC has nevertheless decided to concentrate on providing assistance to small and medium machinery industries and cooperatives, as it is felt that larger enterprises have a greater capability to identify and solve their own problems.

Priority Areas of Assistance

5. In order not to spread its limited resources too thinly, SMIPC will concentrate on metal working manufacturing engineering and production and inventory control technology, as well as in improving maintenance

will concentrate on metal working manufacturing engineering and production and inventory control technology, as well as in improving maintenance management and manufacturing processes. These areas have been identified through surveys and past experience as the areas where machinery industries would need assistance, and where the greatest pay-offs are expected.

Criteria for Selection of Firms to be Assisted

6. The criteria for selection of firms to be assisted are as follows:

- (a) Manufacturers of products and components whose linkage effects are strong;
- (b) Firms which are willing to make changes to improve production technology and are capable of absorbing and utilizing up-to-date technological information and training provided by SMIPC; and
- (c) Industries that have been identified by SMIPC as being particularly weak or which are critical in promoting exports.

Delivery of Assistance

7. In delivering its comprehensive extension service, training, and technical information services, SMIPC will cooperate and coordinate with other organizations in Korea and abroad. This is in order not to spread its limited resources too thinly, and not to duplicate the programs and facilities of other existing institutions. SMIPC will endeavor to play the role of coordinator and will limit build-up of in-house capabilities using its own staff to cases where such a build-up is absolutely necessary.

Organization and Management

8. SMIPC will endeavor to ensure the effective participation of the private sector in its activities and programs. SMIPC will increase the private sector participation (especially from small and medium machinery industry representatives) in its Board of Policy, participate in a coordinating council comprising SMIPC and financial institutions, and continue its systematic and regular mechanisms for consultation with the private sector.

9. SMIPC has appointed a Director with appropriate managerial and technical qualifications to lead Extension Service Departments I and II. A small unit in Extension Service Programming Department II would liaise and coordinate on-site training for small and medium industries identified by consultants with training activities of SMIPC's Training Institute and those other institutions.

Staffing

10. SMIPC will ensure that its staff are paid competitively in comparison with comparable public and private sector institutions, and will periodically review its compensation schemes to ensure competitiveness in order to hire and retain high quality staff. Furthermore, SMIPC will provide training, both formally and by requiring foreign consultants to train counterpart staff, so that a group of professionals will be developed in SMIPC to eventually replace foreign consultants.

Consultancy Firm

11. To help it in recruiting foreign expertise, SMIPC has established representative offices in Frankfurt, Tokyo, and New York. SMIPC also intends to retain the services of consultancy firm(s) to help it recruit and manage foreign consultants. In the case of the consultancy firm(s), SMIPC would require it to help it recruit experts from abroad, and to provide a small technical staff in Korea and a back-up in home office(s) to help solve difficult technical problems and to support training abroad and supply necessary technical information when needed.

Cost Recovery

12. It is SMIPC's intention to initially establish its reputation in providing production technology improvement services and develop the recognition of the need for such services by charging only nominal rates. However, SMIPC recognizes that free goods are often not appreciated, and intends, as a long-run objective, to fully recover the direct costs of providing its services. Over a three-year period, SMIPC intends to raise its charges so that it will recover 30% of its direct costs, and over the next years, increasing at the rate of 10 percentage points a year, it would increase its charges to 90% of direct costs by 1991.

Government Financial Support

13. According to MCI's Ten Year Development Plan for Small and Medium Industry Development, about W500 billion have been indicated for support of SMIPC's activities in 1982-1991. W22 billion has already been allocated to SMIPC in 1982, and MCI has requested an amount of W200 billion for the Fifth Plan Period, 1982-1986, for the support of SMIPC.

Technological Information System and Central Supply Facilities

14. SMIPC is a member of TECHNUNET/Asia. In providing technical information services, SMIPC will focus on providing library services, and practical and useful information on production techniques, including films, catalogs, handbooks, manuals, pocket guides, etc.

15. In the case of central supply facilities, SMIPC will embark upon provision of such services only after careful analysis of their feasibility and only after a pilot project, using leased premises, has established its technical, financial, and economic viability.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Small and Medium Industry Promotion Corporation

Projected Income Statements, 1982-91
(Won million)

	1982 (Budgeted)	1983	1984	1985	1986	1987 (Projected)	1988	1989	1990	1991
<u>Revenues</u>										
Revenues from financing	5,642	6,603	6,986	10,337	13,390	16,459	19,838	23,202	26,317	29,111
Revenues from cooperatives project	5,648	367	434	919	866	1,064	992	921	842	776
Revenues from leasing project	627	1,458	2,772	4,434	6,136	8,289	11,012	12,538	15,823	17,050
Revenues from extension services and PROTIP	80	356	807	807	631	742	793	806	786	878
Other revenues	255	648	903	1,403	1,478	2,922	3,272	3,668	4,367	4,534
<u>Total Revenues</u>	<u>12,252</u>	<u>9,432</u>	<u>11,902</u>	<u>17,900</u>	<u>22,501</u>	<u>29,476</u>	<u>35,907</u>	<u>41,135</u>	<u>48,135</u>	<u>52,349</u>
<u>Expenses</u>										
Financing costs	69	120	175	184	227	263	300	321	341	351
Cooperatives project costs	5,568	-	-	442	442	442	702	703	702	702
Training costs	1,502	1,773	1,964	1,964	1,964	2,162	2,389	2,629	2,886	3,030
Extension and PROTIP costs	4,196	5,862	7,511	8,525	9,038	10,025	10,813	11,600	11,395	11,380
Technical and regional development costs	236	365	804	1,089	1,378	1,679	1,986	2,293	2,606	2,668
Information service costs	923	624	706	777	904	996	1,094	1,204	1,323	1,457
Local and overseas branch costs	451	492	641	963	1,102	1,432	1,556	1,628	1,709	1,784
Leasing project costs	777	1,857	3,438	4,734	6,554	8,097	9,454	10,831	12,060	12,983
Other costs	143	327	30	33	36	40	44	48	53	53
<u>Total Direct Costs</u>	<u>13,865</u>	<u>11,420</u>	<u>15,269</u>	<u>18,711</u>	<u>21,645</u>	<u>25,136</u>	<u>28,341</u>	<u>31,257</u>	<u>33,075</u>	<u>34,408</u>
Salary	3,149	3,655	4,505	4,862	5,155	5,687	6,162	6,685	7,260	7,903
Administrative expenses	1,358	1,188	1,278	1,364	1,464	1,549	1,649	1,753	1,864	1,979
Interest payments	161	838	1,249	1,577	1,655	1,514	1,368	1,217	1,059	894
<u>Total Indirect Costs</u>	<u>4,668</u>	<u>5,681</u>	<u>7,032</u>	<u>7,803</u>	<u>8,274</u>	<u>8,750</u>	<u>9,179</u>	<u>9,655</u>	<u>10,183</u>	<u>10,776</u>
<u>Total Expenses</u>	<u>18,533</u>	<u>17,101</u>	<u>22,301</u>	<u>26,514</u>	<u>29,919</u>	<u>33,886</u>	<u>37,520</u>	<u>40,912</u>	<u>43,258</u>	<u>45,184</u>
<u>Net Income (Losses)</u>	<u>(6,281)</u>	<u>(7,669)</u>	<u>(10,399)</u>	<u>(8,614)</u>	<u>(7,418)</u>	<u>(4,410)</u>	<u>(1,613)</u>	<u>223</u>	<u>4,877</u>	<u>7,165</u>

Source: SMIPC.

AEPID
August 1982

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Small and Medium Industry Promotion Corporation

Projected Cash Flow Statements, 1982-91
(Won million)

	1982 (Budgeted)	1983	1984	1985	1986	1987 (Projected)	1988	1989	1990	1991
<u>Sources of Funds</u>										
Government contributions	24,874	37,157	39,040	51,330	58,290	58,816	58,406	53,032	47,762	42,570
Borrowings	3,582	6,427	4,799	2,675	-	-	-	-	-	-
Revolving fund	2,462	11,405	20,051	8,222	13,579	21,429	29,224	38,132	44,936	52,782
Project operating revenues	8,197	8,932	11,402	16,900	21,501	27,976	34,407	39,635	46,135	50,349
Nonoperating revenues	200	500	500	1,000	1,000	1,500	1,500	1,500	2,000	2,000
Depreciation	851	1,685	977	1,984	1,094	1,466	1,285	1,292	1,163	883
Retirement allowances & others /a	15,332	329	469	506	536	602	651	705	765	831
<u>Total</u>	<u>55,498</u>	<u>66,435</u>	<u>77,238</u>	<u>82,617</u>	<u>96,000</u>	<u>111,789</u>	<u>125,473</u>	<u>134,296</u>	<u>142,761</u>	<u>149,415</u>
<u>Uses of Funds</u>										
Modernization projects	28,175	37,429	44,577	47,274	55,379	64,399	71,596	74,736	77,364	81,116
Training & training institute	11,378	7,646	4,088	1,638	1,623	1,869	2,093	2,304	2,648	2,813
Extension services & PROTIP	4,328	6,185	8,005	9,309	10,683	11,585	12,288	12,990	12,700	12,600
Technical dev. & investments	-	100	2,773	3,634	6,555	9,456	12,358	15,259	18,160	19,170
Subcontracting support	-	4,340	5,050	5,050	5,050	6,060	7,070	8,080	9,090	10,100
Folkcraft & rural industry	751	1,665	3,291	3,820	4,853	5,388	5,928	6,469	7,016	7,568
Information	921	624	706	777	904	996	1,094	1,204	1,323	1,457
Administration	5,010	5,402	6,260	7,322	7,785	8,794	9,492	10,248	11,074	11,971
Debt service & other	2,423	1,085	1,124	1,423	1,697	1,371	1,855	1,288	1,780	1,272
<u>Total</u>	<u>52,986</u>	<u>64,476</u>	<u>75,874</u>	<u>80,247</u>	<u>94,529</u>	<u>109,918</u>	<u>123,774</u>	<u>132,578</u>	<u>141,155</u>	<u>148,067</u>
<u>Surplus/(Deficit)</u>	<u>2,512</u>	<u>1,959</u>	<u>1,364</u>	<u>2,370</u>	<u>1,471</u>	<u>1,871</u>	<u>1,699</u>	<u>1,718</u>	<u>1,606</u>	<u>1,348</u>
Cumulative surplus/(deficit)	2,512	4,471	5,835	8,205	9,676	11,547	13,246	14,964	16,570	17,918

/a Others include cash balance in beginning of 1982 of W 15,211 million.

Source: SMIPC.

AEPID
August 1982

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Small and Medium Industry Promotion Corporation

Projected Balance Sheets, 1982-91
(Won million)

	1982 (Budgeted)	1983	1984	1985	1986	1987 (Projected)	1988	1989	1990	1991
<u>Assets</u>										
Current assets	22,580	33,488	21,023	28,308	37,187	46,411	56,316	64,135	72,885	82,949
Investments & other assets	49,978	63,161	101,794	135,206	170,901	210,669	251,914	292,114	331,631	367,824
Fixed assets (net)	19,300	31,395	38,829	43,418	48,855	53,366	58,060	62,299	65,627	68,011
<u>Total</u>	<u>91,858</u>	<u>128,044</u>	<u>161,646</u>	<u>206,932</u>	<u>256,943</u>	<u>310,446</u>	<u>366,290</u>	<u>418,548</u>	<u>470,143</u>	<u>518,784</u>
<u>Liabilities & Fund Balances</u>										
Current liabilities	86	225	481	1,258	1,308	1,363	1,422	1,487	1,559	1,637
Long-term liabilities	4,129	10,688	15,393	17,186	16,265	15,307	14,299	13,237	12,121	10,949
Government contributions	79,875	117,032	156,072	207,402	265,692	324,508	382,914	435,946	483,708	526,278
Private contributions	12,649	12,649	12,649	12,649	12,649	12,649	12,649	12,649	12,649	12,649
Cumulative losses	(4,881)	(12,550)	(22,949)	(31,563)	(38,971)	(43,381)	(44,994)	(44,771)	(39,894)	(32,729)
<u>Total</u>	<u>91,858</u>	<u>128,044</u>	<u>161,646</u>	<u>206,932</u>	<u>256,943</u>	<u>310,446</u>	<u>366,290</u>	<u>418,548</u>	<u>470,143</u>	<u>518,784</u>

Source: SMIPC.

AEPID
August 1982

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

SMALL AND MEDIUM INDUSTRY PROMOTION CORPORATION

Cost Recovery Guidelines for PROTIP

1. It is SMIPC's principle to levy a nominal charge on each firm for its provision of technical assistance to attract full commitment and cooperation. For the Production Technology Improvement Program (PROTIP), SMIPC has drawn up guidelines to determine the amount of charge to be paid by firms to SMIPC for the services of technical assistance rendered to firms by SMIPC in accordance with the following schedules:

- (a) In case of provision of technical assistance jointly by domestic and foreign specialists or by a foreign specialists only, the amount of charge will be equivalent to local living expenses of foreign specialists.
- (b) In case of provision of technical assistance by a domestic specialist, the amount of charge will be equivalent to local travel expenses of the domestic specialist.

Calculation of Working Hours for Technical Assistance (T/A)

2. The actual working hours spent for technical assistance include:

- (a) Hours spent for final remarks on the final day of technical assistance.
- (b) Meeting hours with company executives or staff members for technical discussion.
- (c) Hours spent for preparation of daily report
- (d) Hours spent for preparation of the final report.

Calculation of the Amount of Charge

- (a) The amount of charge shall be calculated as set forth below on the basis of local living expenses in the amount of US\$140 (equivalent to W 100,000) per diem for a foreign specialist:

(i) In case of provision of technical assistance by single foreign specialist:

a. In case the consulting fees of the foreign specialist are less than US\$5,000 per month.

Amount of charge = W 100,000 x 1/8 x Hours of T/A

b. In case the consulting fees of the foreign specialist are more than US\$5,000 per month:

Amount of charge = W 100,000 x 1/8 x Hours of T/A x
Consulting fees per month/\$5,000

(ii) In case of provision of technical assistance by a group of more than two foreign specialists, the amount of charge will be the combination of the following:

a. The amount of charge calculated in accordance with Item (a) only for the specialist whose consulting fees are the highest.

b. 20% discount of the amount of charge calculated in accordance with Item (a) for the remaining specialists.

(b) With regard to provision of technical assistance by a domestic specialist, the amount of charge will be calculated on the basis of local travel expenses of the specialist in the amount of W 30,000 per day as follows:

Amount of charge = W 30,000 x 1/8 x Hours of T/A

Exemption of Charge

3. The charge will be exempted for the following cases:

(a) Companies which belong to small industry.

(b) When recognized as necessary by the President of SMIPC in consideration of each firm's financial situation, etc.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Basic Data of Participating Financial Institutions

The Small and Medium Industry Bank

1. Year of Establishment: 1961

2. <u>Ownership:</u>	<u>Paid-in share capital</u>	
	<u>Won million</u>	<u>Percent</u>
Government of Korea	91,060	85.0
Others	16,000	15.0
<u>Total</u>	<u>107,060</u>	<u>100.0</u>

3. <u>Operations</u> (Won million):	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1st qtr 1982</u>
<u>Approvals</u>					
Working capital loans	2,222,772	3,442,192	4,731,049	6,659,876	1,971,514
Equipment loans					
Domestic currency	42,638	65,139	61,257	126,528	8,042
Foreign currency	36,498	45,958	22,165	30,840	6,974
(Foreign currency loans in \$'000)/a	(52,140)	(65,654)	(31,664)	(44,057)	(9,713)
<u>Total Approvals</u>	<u>2,301,908</u>	<u>3,553,289</u>	<u>4,814,471</u>	<u>6,817,244</u>	<u>1,986,530</u>
<u>Outstanding</u>					
Working capital loans	283,094	439,338	692,990	1,079,394	1,093,325
Equipment loans					
Domestic currency	72,610	122,639	159,225	247,231	246,674
Foreign currency	101,163	116,906	171,677	159,235	160,099
<u>Total Outstanding</u>	<u>456,867</u>	<u>678,883</u>	<u>1,023,892</u>	<u>1,482,562</u>	<u>1,500,098</u>

4. Earnings Record (percentages):

Net income as % of average equity	3.3	3.6	22.3	10.2	8.7
Financial expenses as % of average total assets	8.6	9.4	11.9	11.6	3.2
Administrative expenses as % of average total assets	3.3	3.1	3.3	3.2	2.3
Book value as % of par	129.0	124.0	134.0	123.0	158.0
Dividend payout ratio	23.0	22.0	17.9	34.3	n.a.

/a Using exchange rate of US\$1 = W 700.

5. Financial Position (Won million):

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1st qtr 1982</u>
Total assets	733,325	1,039,107	1,411,464	1,944,925	1,983,366
of which total loan portfolio	456,867	678,883	1,016,892	1,464,660	1,500,098
Long-term debt	240,781	342,861	379,965	431,094	432,015
Equity	25,814	33,649	74,101	131,909	169,185
Current ratio	1.0	1.0	0.9	0.9	0.9
Long-term debt/equity ratio	8.5	9.1	4.8	3.2	2.5
Reserves and provisions as % of loan portfolio	1.4	1.0	2.5	2.4	3.0

6. Status of IBRD Loans as of September 30 1982 (in US\$ '000)

<u>Loan no.</u>	<u>Date signed</u>	<u>Date effective</u>	<u>Rate of interest</u>	<u>Onlend- ing rate</u>	<u>Loan amount</u>	<u>Committed</u>	<u>Dis- bursed</u>	<u>Out- standing</u>
1175-KO	11/26/75	01/28/76	8.5	10.5	30,000	29,860	29,860	12,300
1507-KO	01/04/78	03/10/78	7.9	9.9	55,000	54,989	54,989	22,350
1749-KO	07/23/79	09/26/79	7.9	9.9	60,000	59,726	59,290	47,580

/a Preliminary figures.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Basic Data of Participating Financial Institutions

Korea Long-Term Credit Bank

1. Year of Establishment: 1967

2. <u>Ownership</u> :	<u>Paid-in share capital</u>	
	<u>Won million</u>	<u>Percent</u>
Private domestic institutions & individuals	39,209	78.4
Private foreign institutions & individuals	10,791	21.6
<u>Total</u>	<u>50,000</u>	<u>100.0</u>

3. Operations (Won million):

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1st qtr 1982</u>
<u>Approvals</u>					
Working capital loans	1,546	1,817	54,730	100,595	22,663
Equipment loans					
Domestic currency	1,440	2,700	19,110	38,031	4,935
Foreign currency	46,050	59,855	86,344	99,317	1,750
<u>Total Approvals</u>	<u>49,036</u>	<u>63,694</u>	<u>158,529</u>	<u>234,942</u>	<u>29,348</u>
<u>Outstanding</u>					
Working capital loans	-	986	50,660	124,336	142,842
Equipment loans					
Domestic currency	4,764	6,812	23,699	48,160	46,010
Foreign currency	137,807	173,921	279,139	335,870	342,693
<u>Total Outstanding</u>	<u>142,571</u>	<u>181,719</u>	<u>353,498</u>	<u>508,366</u>	<u>531,545</u>

4. Earnings Record (percentages):

Net income as % of average equity	17.1	20.1	25.2	15.1	7.4
Financial expenses as % of average total assets	8.4	8.2	9.7	8.3	3.7
Administrative expenses as % of average total assets	0.32	0.37	0.34	0.78	0.66
Book value as % of par	172.9	198.2	128.7	141.5	134.5
Dividend payout ratio	49.9	61.7	62.8	53.9	n.a.

5. Financial Position (Won million)

	1978	1979	1980	1981 /a	1st qtr 1982
Total assets	164 365	209,205	425,988	612,377	653 720
Of which total loan portfolio	142,571	184,491	353,498	508,366	428,197
Long-term debt	139,526	179,672	330,848	489,970	455,176
Equity	17,292	19,819	64,373	70 740	67,239
Current ratio	1.5	1.5	1.7	1.5	1.5
Long-term debt/equity ratio	8.1	9.1	5.2	7.0	4.6
Reserves and provisions as % of loan portfolio	6.6	6.8	5.1	5.2.	4.2

6. Status of IBRD Loans as of September 30 1982 (in US\$ '000)

<u>Loan no.</u>	<u>Date signed</u>	<u>Date effective</u>	<u>Rate of interest</u>	<u>Onlend- ing rate</u>	<u>Loan amount</u>	<u>Committed</u>	<u>Dis- bursed</u>	<u>Out- stand-</u>
1635-KO	12/07/78	02/06/79	7.35	9.35	100,000	99,683	99,633	79,550
1932-KO	01/14/81	03/19/81	9.25	<u>/b</u>	90,000	62,888	51,350	47,100

/a Net of cancellation.

/b Two percent above the weighted average cost of official borrowings.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Basic Data of Participating Financial Institutions

The Citizens National Bank

1. Year of Establishment: 1962

2. <u>Ownership:</u> (As of 8/31/82)	<u>Paid-in share capital</u>	
	<u>Won million</u>	<u>Percent</u>
Government of Korea	24,676.4	65.6
Commercial banks	12,879.7	34.2
Others	67.2	0.2
<u>Total</u>	<u>37,623.3</u>	<u>100.0</u>

3. Operations (Won million):

	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1st qtr 1982</u>
<u>Approvals</u>					
Working capital loans	152,463	180,269	282,132	335,949	68,520
Equipment loans					
Domestic currency	17,093	19,903	17,384	27,917	4,720
Foreign currency	-	850	4,554	11,050	3,515
<u>Total Business Loans</u>	<u>169,556</u>	<u>201,022</u>	<u>304,070</u>	<u>374,916</u>	<u>76,755</u>
General populace loans	170,984	200,325	306,144	508,026	205,520
<u>Total Approvals</u>	<u>340,540</u>	<u>401,347</u>	<u>610,214</u>	<u>882,942</u>	<u>282,275</u>
<u>Outstanding</u>					
Working capital loans	205,429	283,654	415,286	511,646	513,747
Equipment loans					
Domestic currency	32,285	37,209	36,487	47,803	48,574
Foreign currency	-	-	1,808	11,075	13,413
<u>Total Business Loans</u>	<u>237,714</u>	<u>320,863</u>	<u>453,581</u>	<u>570,524</u>	<u>575,743</u>
General populace loans	196,261	246,375	385,363	628,094	749,060
<u>Total Outstanding</u>	<u>433,975</u>	<u>567,238</u>	<u>838,944</u>	<u>1,198,618</u>	<u>1,324,794</u>

4. Earnings Record (percentages):

Net income as % of average equity	20.6	8.8	34.9	14.8	23.8
Financial expenses as % of average total assets	8.6	9.3	11.5	12.3	10.3
Administrative expenses as % of average total assets	3.7	4.1	3.8	4.0	3.4

5. Financial Position (Won million):

	1978	1979	1980	1981	1st qtr 1982
Total assets	868,792	1,177,303	1,501,084	2,019,784	2,430,361
Of which total loan portfolio	433,975	567,238	838,944	1,198,617	1,547,733
Long-term debt	267,577	232,056	290,921	411,718	495,507
Equity	11,076	37,295	46,510	53,769	45,751
Current ratio	1.20	1.13	1.11	1.11	1.10
Long-term debt/equity ratio /a	24.2	6.2	6.3	4.7	6.6
Reserves and provisions as % of loan portfolio	1.60	1.70	2.40	2.4	1.98

6. Status of IBRD Loans as of September 30 1982 (in US\$ '000)

Loan no.	Date signed	Date effective	Rate of interest	Onlend- ing rate	Loan amount	Committed	Dis- bursed	Out- standing
1829-K0	05/07/80	08/06/80	8.25	10.25	30,000	26,913	19,217	17,840
2144-K0	05/24/82	08/24/82	11.60	13.60	30,000	0	0	0

/a After excluding current maturities.

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

Machinery Industries and the Manufacturing Sector

Estimated Commitments and Disbursements of Proposed Bank Loan /a
(\$'000)

IBRD fiscal year and quarter	SMIPC				SMIB				KLB				CNB				Consolidated (SMIPC, SMIB, KLB and CNB)			
	Commitment		Disbursement		Commitment		Disbursement		Commitment		Disbursement		Commitment		Disbursement		Commitment		Disbursement	
	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b	Amount	% /b
FY83																				
Jan-Mar 1983	825	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	825	1.2	-	-
Apr-Jun 1983	825	15.0	825	1.5	2,500	8.6	1,000	3.4	2,000	10.0	-	-	1,500	15.0	-	-	6,825	10.9	1,825	2.6
Subtotal	1,650	15.0	825	7.5	2,500	8.6	1,000	3.4	2,000	10.0	-	-	1,500	15.0	-	-	1,650	10.9	1,825	2.6
FY84																				
Jul-Sep 1983	825	22.5	825	15.0	2,500	17.2	2,500	12.1	2,500	22.5	-	-	1,500	30.0	1,500	15.0	7,325	21.4	4,825	9.5
Oct-Dec 1983	825	30.0	825	22.5	3,000	27.6	2,500	20.7	2,500	35.0	2,000	10.0	1,500	45.0	1,500	30.0	7,825	32.6	6,825	19.3
Jan-Mar 1984	1,375	42.5	825	30.0	3,000	37.9	3,000	31.0	2,500	47.5	2,500	22.5	1,500	60.0	1,500	45.0	8,375	44.5	7,825	30.4
Apr-Jun 1984	1,375	55.0	1,375	42.5	5,000	55.2	3,000	41.4	2,500	60.0	2,500	35.0	1,500	75.0	1,500	60.0	10,375	59.4	8,375	42.4
Subtotal	4,400	55.0	3,850	42.5	13,500	55.2	11,000	41.4	10,000	60.0	7,000	35.0	6,000	15.0	6,000	60.0	33,900	59.4	27,850	42.4
FY85																				
Jul-Sep 1984	1,375	67.5	1,375	55.0	5,000	72.4	4,000	55.2	3,000	75.0	2,500	47.5	1,000	90.0	1,000	70.0	10,375	74.2	8,875	55.1
Oct-Dec 1984	1,375	80.0	1,375	67.5	4,000	86.2	4,000	69.0	3,000	90.0	2,500	60.0	1,000	100.0	1,000	80.0	9,375	87.6	8,875	67.8
Jan-Mar 1985	550	85.0	1,375	80.0	4,000	100.0	2,500	77.6	2,000	100.0	2,000	70.0	500	100.0	500	85.0	7,050	97.6	6,375	76.9
Apr-Jun 1985	550	90.0	550	85.0	-	-	2,500	86.2	-	-	2,000	80.0	-	-	500	90.0	550	98.4	5,550	84.8
Subtotal	3,850	90.0	4,675	85.0	13,000	100.0	13,000	86.2	8,000	100.0	9,000	80.0	2,500	100.0	3,000	90.0	27,350	98.4	29,675	84.8
FY86																				
Jul-Sep 1985	550	95.0	550	90.0	-	-	2,000	93.1	-	-	2,000	90.0	-	-	250	92.5	550	99.2	4,800	91.6
Oct-Dec 1985	550	100.0	550	95.0	-	-	1,000	96.6	-	-	1,000	95.0	-	-	250	95.0	550	100.0	2,800	95.6
Jan-Mar 1986	-	-	275	97.5	-	-	500	98.3	-	-	500	97.5	-	-	250	97.5	-	-	1,525	97.8
Apr-Jun 1986	-	-	275	100.0	-	-	500	100.0	-	-	500	100.0	-	-	250	100.0	-	-	1,525	100.0
Subtotal	1,100	100.0	1,650	100.0	-	-	4,000	100.0	-	-	4,000	100.0	-	-	1,000	100.0	1,100	100.0	10,650	100.0
Total	11,000	100.0	11,000	100.0	29,000	100.0	29,000	100.0	20,000	100.0	20,000	100.0	10,000	100.0	10,000	100.0	70,000	100.0	70,000	100.0

/a Assuming loan would become effective during third quarter of FY83.

/b Percentages are cumulative.

AEPID
September 7, 1982

KOREA

SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT

List of Documents in the Project File

1. Projected Demand for Engineering Products by Major Categories
2. Priority Areas of Technical Assistance (Review by Consultant)
3. Major Institutions for Delivering Technical Assistance
4. Priority Areas of Training and Institutional Arrangement for Providing Such Training
5. Summary Write-ups on the Participating Financial Institutions:
With three sections, one each on KLB, SMIB, and CNB.
6. Feasibility Study of the Central Supply Services (KOPTEC)
7. Extension Service Study (MCI)
8. Review of Extension Service Study (by Consultant)
9. SMIPC's Operational Projections
10. Major Policy Issues of Relevance to the Machinery Industries

KOREA
SMALL AND MEDIUM MACHINERY INDUSTRY PROJECT
Small and Medium Industry Promotion Corporation
Organization Chart

